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Manpower aspects of educational planning



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Manpower aspects of educational planning

Problems for the future



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Foreword



This book examines several urgent and complex problems which promise to occupy the attention of educational and manpower planners and policy-makers for years to come, especially in developing countries.

The problems considered here lie beyond the purview of the 'manpower approach' to educational planning as it was conceived and hotly debated a few years ago, but they are in the same general line of evolution.

The central issue then was whether and to what extent educational systems should be planned with a view to producing the appropriate amounts and kinds of manpower which economists foresaw as being required to fulfil economic-growth plans. This seemed to most economists a perfectly logical notion; if education was to be a 'good investment' in national development, its 'products' would have to fit the priority needs of economic growth. But to many educators the whole idea was repulsive, for it seemed to view students as future manpower units rather than as individuals, to be crassly materialistic, and to disregard the great humanistic aims and values which educators had long cherished. As is so often the case, much of the difficulty was semantic and the product of mutual misunderstandings, but there were also some very real differences that had to be thrashed out.

This particular debate has now been largely resolved, roughly mid-way between the two positions. Most educators and economists familiar with such matters are now in general accord that a nation's future manpower needs – to the extent that they can be reasonably well estimated – should be given serious weight in formulating educational development plans, but that other social and individual objectives should also be seriously weighed. In short, the 'manpower approach' should be but part of a broader approach to educational planning.

There still remain, despite this greater harmony of views, some differences of opinion and a great deal of unfinished business, having to do especially with improving the techniques for making manpower estimates and for applying them effectively in educational planning. Fortunately, these matters are receiving attention in several quarters and progress is being made.

Meanwhile, however, some rather different problems have begun to bulk large on the changing horizon of educational and manpower planning that have received much less study than the older issues. To explore some of these, the International Institute for Educational Planning thought it timely to hold a symposium on three broad topics. They were:

1. Employment opportunities for the educated. This rapidly growing problem is rather the reverse of the problem of manpower shortages which commanded prime attention only a few years ago.
2. The role of education in rural and agricultural development. Economic development experts and policy-makers have lately come to regard agricultural and rural development as perhaps the number one problem for many developing countries, deserving of a higher priority than it has been getting.
3. The implementation of educational and manpower plans. This includes not only problems of administration and organization but the thorny issue of how prevailing wage structures and other incentives can make or break the best-laid plans.

With its agenda thus defined, the symposium convened on 23-25 May 1966 at the Institute's headquarters in Paris. The participants came from diverse professional and cultural backgrounds (see List of participants, page 9). Most were practising manpower and educational planners or academic students of those subjects. But they were supplemented by general development economists, educators and agricultural experts. Drawn from both developing and developed countries, they had worked in the context of widely different social and economic systems. Hence the wide variety of opinions and points of view that marked the symposium when it got under way.

The symposium gave particular attention to specifically African problems (on which the Institute had recently done a series of research studies) and for this reason dwelt on subjects such as subsistence agriculture, high educational costs, population, rural unemployment, and the marked differentials of income in different sectors of national life. Yet the African context in which these matters were at first discussed did not prevent them from having a more general relevance. The opposite was true. What was said with Africa in mind was recognized and often amplified by symposium participants who had intimate knowledge of the problems of Latin America, the Mediterranean countries, and Asia.

This is not to suggest that the symposium reached full agreement on a set of recommendations for broadcast as in a manifesto. It is doubtful that such agreement could have been attained, given the diverse backgrounds of the participants - and the complexity of the topics posed for discussion. In any event it was not the aim of the symposium to produce a package of recom-

mendations. Rather it was to identify, examine and clarify specific new problems emerging on the moving frontier of manpower and educational planning. It was to highlight urgent policy questions on that frontier which await decisions by the makers of policy. It was to indicate, if possible, where the co-operative efforts of men from different intellectual disciplines could help guide the practical work of manpower and educational planners.

A symposium, by its nature, has a destiny of its own. It can be full of turns and returns, of brusque advances and retreats, of long gropings and sudden flashes of light. In some such way, the papers prepared in advance of the symposium, and the discussion they precipitated, threw up a set of problems that ordinarily do not surface at a meeting of technical experts. In the same way, the confrontation between abstract ideas and concrete experiences brought under siege many commonly held views – while the symposium found itself dealing as much with over-all economic and social development as with educational and manpower planning. The net effect was to underline a salient fact: that there is now under way a significant realignment in the conceptual approach to the development of human resources. If further proof were needed, ample evidence was provided from the intellectual history of the participants themselves. Several who had written outstandingly on these matters gave eloquent testimony of how their earlier views had been rudely shaken and reshaped by subsequent encounters with the sharp-edged realities of situations in various developing countries.

In the preparation of this volume, it was felt that a publication of the papers alone would not be truly representative of the symposium – since much of what emerged lay in the cut and thrust of the discussion. It therefore seemed best to include substantial verbatim extracts from the discussion as it unfolded – but edited so as to delete restatements of points already made at an earlier phase of the symposium. These extracts and the various papers contributed by participants are arranged in the volume according to the three main topics mentioned above.

The book begins, however, with a general synthesis and commentary, prepared by George Skorov, a senior staff member of the Institute, who carried the main responsibility for organizing the symposium and for bringing it to a successful end. Much credit is also due to Sidney Hyman, social scientist, writer and editorial consultant to the Institute, for his skilful help in cutting and stitching so many colourful pieces into a reasonably unified pattern. Finally, thanks are extended to Michel Debeauvais of OECD for his generous assistance in connexion with preparing and conducting the symposium.

The Institute extends its thanks to each of the participants in the symposium, not only for their valuable papers and comments at the time but for their subsequent help and patience in seeing this book to conclusion. Responsibility for the views presented here resides, of course, with the individual authors and

speakers who expressed them, and not with the Institute or Unesco. The Institute welcomes the responsibility, however, for making these freely expressed views available to a wider audience, in the hope that they will be found both stimulating and useful.

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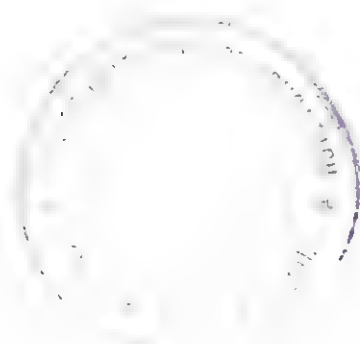
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Introduction

G. Skorov Highlights of the symposium



Highlights of the symposium

The aim of this introduction is to highlight the key issues discussed in the papers prepared for the symposium and to reconstruct the lines of argument they inspired. I have tried to render as faithfully as possible the spirit of what was written and said. I have, however, taken the liberty of going beyond the frame of the actual debate where it seemed that, by doing so, the report would gain in clarity.

1 Relationship between education, manpower, and economic growth : evolution of concepts

In the course of the symposium much of the discussion dealt with the evolution of ideas bearing on the relationship between the economy, manpower and education. Three points in particular held the centre of attention. They were: the economic environment in which the educational and manpower planners are working; the evolution of techniques and problems of human-resource planning; the new attitude towards education as a factor in the development process.

Changed outlook on economic development problems

Experiences of recent years have undercut certain accepted assumptions about the economic growth of developing countries. For one thing, economic development has been less rapid than was anticipated. Some years ago, for example, it was argued that not many countries would be content with

¹ The author wishes to express his gratitude to Michel Debeauvais, from the OECD secretariat, for his valuable contribution to and assistance in preparing this final report at earlier stages of its drafting

planning for a target of only 5 per cent annual growth rate of gross national product, as advocated for the United Nations Development Decade. Today, however, that target appears a very ambitious one. For another thing, the slow rate of economic growth has brought into sharp focus the extent to which all developing countries are saddled by a severe under-use of their human resources – because the number of new job opportunities being created are falling far short of the number of new entrants on the labour market. These factors – coupled with a steady population growth of some 3 per cent annually in many developing countries, at a time when the world's food resources are only increasing at the annual rate of 2 per cent – afflict the task of economic development with difficulties unknown in previous history. It has become increasingly clear that the developing countries cannot, as was once believed, easily boost their rate of growth simply by drawing on the technological progress already made by the industrialized countries. They cannot skip the intermediate stages of growth the industrialized countries experienced, though they may accelerate them. It is now realized that the problems and process of economic growth in the developing countries are very complex – that it may take a much longer time for them to reach the point of self-sustained growth than was originally thought. It is now realized, too, that if they are to reach that point, a union of appropriate technological innovations and new patterns of social organization must be adapted to the conditions which actually prevail in the developing world. How is it possible to make better use of the enormous human potential of the developing countries? The question cropped up at every turn of the discussion. It was noted by many participants in the symposium that the modern sector in developing countries employs only a small portion of the available labour force and that industrialization to date has not eased the employment problem. On this ground, some participants stressed that increased attention should be given to the development problems of the traditional agricultural sector, and with a triple object in view: to make a fuller use of human resources, to create the savings, consumer buying power and foreign exchange to feed industrial development, and to cope with the world problem of food shortages. In this connexion, it was observed that economic planning had thus far been mainly focused on the modern sector, while the traditional sector was treated as being of secondary importance. Thus some participants in the symposium called for a fresh approach to economic-development planning – an approach that would embrace the whole of the national economy, giving a better balance of emphasis to both the monetary and subsistence sectors, and where the problems of utilizing human resources would receive a much greater emphasis than they had up to now. Also in this connexion, the excessive weight given to GNP (gross national

product) as the principal index of planning models and as the prime yardstick to measure national advancement was sharply criticized by some. The GNP concept, if applied without reservation to developing countries, may sometimes be very misleading. In the first place, GNP cannot possibly be measured with any degree of precision in countries with a large subsistence sector, and where the evaluation of output and consumption is often a matter of guesswork. Secondly, according to common usage in calculating GNP, salaries of the civil service – which are abnormally high in most developing countries in relation to the average *per capita* income – are considered as a component of GNP. Thus their increase inevitably swells the GNP figure, though it could just as well be argued that it should be subtracted from GNP. Thirdly, in many cases the over-all growth of GNP conceals a growing disparity between modern and traditional parts of the national economy, between various regions of the country, and between different social groups. It may thereby strikingly distort the picture of the actual progress achieved, as far as the bulk of citizens are concerned.

Nevertheless, since the progress and success of economic development is usually equated with this arbitrary GNP figure, how is it possible to avoid the limitations inherent in its use? It was suggested that, to get a fuller and more accurate picture, the conventional criteria for measuring economic-development progress should be widened to include such matters as the ratio of utilization of human resources, the rate of modernization of the traditional sector, the ability of the economy to feed the population, and the availability of food resources in relation to the population growth.

Is there a case for a new development strategy which would focus primarily on employment problems? Not all the participants were prepared to answer this question in the affirmative. There was, however, a general consensus in support of the proposition that human-resource planners should be much more involved than before in framing economic plans and in setting national development targets. The view here squares with the efforts of ILO (International Labour Organization) to include employment objectives in over-all development plans. But it was further suggested at the symposium that these general objectives should be subdivided into employment targets according to levels of skills and categories of educational requirements.

Perhaps the most significant change in thinking about manpower planning appears in the signs of how its scope has widened. In earlier years, manpower requirements, forecasts and planning in fact dealt only with 'high-level' manpower; quite often they only dealt with a subsection of that manpower – as for example, scientific and technical personnel. The practice was understandable when one takes into account the length of time that is required to train high-level manpower, and the strategic role it plays in national development. Experience, however, has shown the limitations

inherent in this very practice. There is, therefore, a slow but growing movement away from a relatively narrow and fragmentary concept of manpower planning, and toward a larger conceptual view of the *over-all* development of human resources. The participants in the symposium fully endorsed this larger outlook. It was their unanimously expressed conviction that only a comprehensive approach to human resource development and utilization – embracing all categories of manpower in both the modern and traditional sectors of the economy – can provide a firm foundation for a rational manpower policy and an adequate basis for educational planning.

The symposium also revealed two more basic conceptual changes which are of a piece with the foregoing.

One is a shift in attitude toward educational planning. It is now believed that educational planning can be really effective and consistent with economic development only if it comprehensively embraces all levels and types of education, including non-formal education. The other is a change in perspective concerning the relationship of manpower and educational plans to manpower needs.

In times past, such plans – in so far as they were related to manpower needs – had as their primary object the elimination of acute manpower shortages, because the dearth of high-level and middle-level manpower appeared to be one of the major constraints on economic growth. Indeed, that dearth seemed to be a salient fact of life in most developing countries. Today, while acute shortages of certain types of trained manpower still exist, some countries currently present pictures also of manpower surpluses, even in some specialized high-level categories involving post-secondary training. First primary-school leavers and now secondary and university graduates show a tendency to increase in number at a more rapid rate than increases in job openings for them, at least of the sort traditionally associated with their level and type of education.

The case here is exacerbated by an ever-growing supply of young people (owing to the 'population explosion') who are reaching working age and who are creating a very special set of problems bearing on the rate of replacement of employed labour. It was estimated, for instance, that in Peru and Ecuador, two-thirds of the young people coming on to the labour market during the next twenty years will need newly created jobs, whereas in most of the industrially advanced countries the corresponding two-thirds will take the places of their retiring elders.

These factors, operating in different forms in a growing number of countries, have forced manpower and educational planners to face up to a set of new problems in which the over-all labour supply becomes as significant in their reckoning as the need for particular categories of qualified manpower still in short supply.

The evolution of ideas in the field of human-resource planning

It is doubtful if one can refer to a universally accepted body of knowledge and methodology that can be drawn on in educational planning and in assessing manpower needs. Nevertheless, in practice, there are many similarities in the various methods used. Thus from a technical standpoint, there is little difference between the methods outlined in the Unesco manual, *Economic and social aspects of educational planning*,¹ those used in the OECD Mediterranean Regional Project, or those used in countries as different as India, France, Hungary or the U.S.S.R. This may explain why the symposium devoted little time to a discussion of techniques and methods of forecasting manpower needs. References were made to these matters only when it was urged that they be considered in the wider context of development policy. But a point made several times in the discussion is worth noting here. Specifically, most experts today seem less convinced than they once were about the validity of projection methods and the principles on which they are based.

Estimates of manpower needs are mainly derived from economic targets fixed by the planners and the productivity hypotheses underlying the targets. Thus the planners determine projections of manpower needs by sectors, by occupational category and by educational level. The final manpower demand is then expressed in terms of educational targets. This, together with the financial resources the economy can afford to allocate to education, permits the integration of educational planning with economic planning. These assessments, of course, are made for a long term – since it is only over a long period that the educational system can modify the structure of the labour force. Further, these methods implicitly assume that any given production target has a corresponding occupational structure which itself corresponds to more or less fixed types and levels of education.

Against this background, it was formerly thought that better statistics would make it possible to obtain technical coefficients which could be used for assessing manpower needs in the same way as input/output coefficients are used in economic planning. But what has happened? On the positive side, the hope for better statistics is being fulfilled. In Argentina, Peru and Zambia, for example, the population census was analysed on three planes: by occupational category, by sector, and by level of education. The occupational structure is also much better known in India, in the United Arab Republic and in Mexico – to give some further examples. Again, detailed surveys of

¹ Paris, 1964

individual firms have been carried out in all socialist countries, and comparative studies have been undertaken by OECD to analyse the occupational structure in relation to productivity. And again, in some countries, such as Japan and the U.S.A., two successive censuses, symmetrical in form, are available which permit a detailed analysis of changes in the employment structure over a period of time. Paradoxically, however, the various improvements in statistical data have brought to light many new problems of employment or have shown that old problems were more complex than was previously imagined.

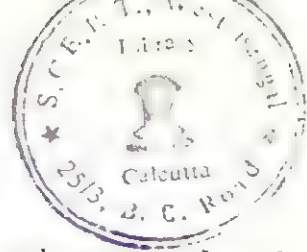
To put the matter directly: empirical studies reveal that in no country is there a rigid relationship between occupations and levels or types of education – any more than between productivity by sector and levels of professional qualifications or levels of general education. All the coefficients seem to vary from one sector to another, from one country to another, and from one time to another. This significantly challenges the value of planning methods based on a rather rigid complementary relationship between production, manpower and education. If, on the other hand, we accept a greater flexibility in these relationships because of the possibility of substitution between occupational categories and between types and levels of training, then any simple mathematical basis for calculating an optimum manpower structure vanishes. But what can be put in its place? Surely we cannot retreat gracefully to the old textbook solution of letting the ‘unseen hand of the market-place’ take care of the matter, for in fact the classic theory, according to which wages and salaries reflect marginal productivity, appears contrary to evidence in developing countries. The disparities in income and social structure compared with differences in individual contributions to national output can hardly be called a mirror image of the results which ‘perfect competition’ would theoretically bring. It was therefore urged that mathematical approaches, which may confer a spurious impression of certainty and which, when applied rigidly, can be downright misleading, be used with great caution. All manpower projections will inevitably be subject to a degree of error and could only be as valid as the data and assumptions on which they are based. There is no substitute for thorough empirical study as a basis for manpower projections and educational planning.

In addition, it was pointed out that methods used for assessing manpower needs for the economy often make no specific allowance for the training requirements of those who are self-employed in subsistence agriculture but do not earn wages. It was felt that development plans should contain well-articulated provisions for the training of agriculturists and for the medium- and high-level personnel involved in this and related activities. All participants were agreed that much more attention needs to be given to the

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manpower requirements for rural and agricultural development, and on this whole matter more research and the improvement of methodology deserve a high priority.

It was urged that manpower requirements studies be not confined to long-term forecasting but include as well the needs of the short term and medium term. With respect to the long-term formation of human resources, it was recognized that it was still very important to assess the needs for graduates and diploma-holders, and their distribution by courses of study. But it was noted that the practical effects of such projections are rarely felt until at least five years later, since the output of the formal educational system is determined by what is already moving in the education pipeline, even though the immediate implications of long-range projections are reflected in current educational decisions and budgets. Besides, there are too many assumptions involved in long-term manpower projections to make them an accurate tool for short-run needs, except by constant checking and adjustments. For this reason, it was proposed that the structure of manpower planning should also include specific proposals for meeting short-term and middle-term needs. Planning should be backed up by careful job analysis. Training programmes including in-service training should be elaborated. Recruitment of skilled personnel from overseas should be planned in harmony with the national effort. And not least important, ways should be sought to improve the utilization of scarce types of manpower.

It has already been said that the participants in the symposium moved outside the framework of a technical discussion of manpower projections, and that they addressed themselves to broader aspects of over-all economic and human development. As part of this process, they were forced to consider the problems involved in implementing manpower plans – and especially, the role played by the national wage and salary structure in manpower deployment. They were forced to do this for yet another reason. Many of the manpower experts, who had approached their subject largely from a theoretical standpoint only a few years ago, have since accumulated a wealth of practical experience in the formidable world of real things. Some, for example, who conducted manpower surveys for a number of developing countries, went on to help design manpower plans and remained in a position where they could judge the efficacy of various specific measures taken to bring manpower supply into balance with demand. The judgement often led to painful conclusions. What they learned through practical experience had a conceptual feed-back that produced alterations in their outlook.

Various specific changes in outlook will be developed more fully at later places in this introduction. But to deal here with a few of them in short-hand form: in reporting their findings, symposium participants observed that incentives – and notably salary differentials – play a tremendous role in

swinging a manpower policy and an educational plan to the side of failure or success, and this new outlook is evidenced in the many current attempts being made both to change the existing salary structure and to relate it to educational and manpower targets. An unfavourable salary structure could indeed be a hindrance to meeting the manpower needs; even when the necessary manpower is trained, the people involved can refuse the jobs for which they have been trained, can take up employment in other sectors, or emigrate. Many Asian and African teachers, for example, look for more remunerative administrative work, and cases are also known of skilled manual workers and technicians who use their certificates and diplomas as passports to other careers. Beyond this, examples were also given of a direct link between excessive increases in wages and decreases in employment.

How is it possible to judge whether a given salary structure favours a rational development and utilization of human resources? This is a complex question, for the full employment of human resources must ensure not only a balance between over-all labour supply and demand but also the inclusion of all occupational groups and all levels and types of educational qualifications. It was suggested by one symposium participant that a possible criterion for a salary structure could be the contribution each type of occupation made to production, but a majority resisted this suggestion on one of two grounds. It would obviously favour the directly productive occupations in industry and agriculture as against so-called 'non-productive' occupations in the tertiary sector for which no market test of contribution is available. And in any case, the application of this seemingly simple criterion of productive versus non-productive occupations would lead to great difficulties of an assorted character. Still, the general tenor of the discussion revealed the symposium's concern over the imbalance in the salary structure common to many developing countries, which slows down their economic progress. The hope was voiced that a long-term incomes policy would be made an integral part of over-all development planning, though it was recognized that this is far easier said than done, even in the most advanced countries.

More about the foregoing will be said at a later place in this report, and the same is true of what follows next. It is that the increased concern with the problems of implementing manpower plans was also reflected in the symposium's discussion of the organizational aspects of human resources planning - aspects which were often neglected in the past. Many participants noted that institutional needs were not fully met once one had set up an administrative structure, composed of a central planning office, along with planning units in various technical ministries, and a manpower unit somewhere to co-ordinate all human resource development problems. Even when such offices have the necessary hierarchical authority and when their admin-

istrative functions are clearly specified, their relations with other parts of the administrative structure lead to a series of complex problems of co-ordination requiring a systematic organization of the lines of communication. Significantly, instead of insisting on the administrative autonomy of educational and manpower planners respectively – as was often the case in the past – those present at the meeting emphasized the need for closer co-operation between such planners, not only in implementing a plan but in the early stages of drafting it.

New attitudes toward education in relation to economic planning

As well as changes in thinking about manpower planning, a noticeable evolution of ideas has been recorded in recent years regarding educational planning. It was observed that in the post-independence era, education was given prominence throughout the developing world both as a basic human right and as one of the main prerequisites of economic progress. Scores of studies appeared both in developed and developing countries highlighting the role of education in economic development. "Investment in human beings was considered a powerful and hitherto inadequately recognized factor of economic growth, accounting for a large unexplained part of it (the 'residual factor'). Salary differentials benefiting high-level manpower and educated persons seemed to support this concept. The high rates of return on educational investment were measured by cost-benefit analyses, both for individuals and for society as a whole. The calculations had a rough-hewn, even arbitrary character. But they almost invariably seemed to show that in terms of productivity, the rate of return on educational expenditures was as high as – and even higher than – that on investments in other directions. With these ideas in mind and under the growing social pressures, governments in nearly all countries allocated an increasing proportion of national resources to education. Owing to the efforts of Unesco, and through its initiative, the international conferences in Karachi, Addis Ababa and Santiago, held in the early sixties, set very ambitious educational targets for whole continents. Not surprisingly, individual countries' responses to the call for heightened educational expansion have been uneven, but the over-all record has been most impressive. Indeed, this very success of educational expansion has led to fresh problems to which educational planners must now give greater attention.

How is one to determine the optimal share of resources which a country should devote to education at a particular stage in its career? It was evident to the participants in the symposium that, especially with lagging economic

progress, preferential treatment of education could be given only at the expense of other national services. The view that education is a fundamental human right is certainly of great importance, yet it alone can hardly provide a basis for rational allocation of resources because the same may be said with respect to health, nutrition and housing – to take but a few examples. It would be hard to know which of these basic rights comes first. On the other hand, to allocate national resources according to the contributions one or another source makes to economic development would be equally hard – since the interrelationship between ‘social investment’ and economic development still contains many unknown and elusive factors. Further, few persons would now argue that any and all expenditures on education constitute a ‘good investment’ and automatically stimulate growth of gross national product. The problem is not simply one of how much to spend, but how and where to spend it best. And thus far no simple formula is available for revealing the answers. Leaving aside political and social considerations – which often play a predominant though not easily quantifiable role when decisions are made about allocating investments for development – the dubious accuracy of calculations of the opportunity cost of education would hardly be a sufficient basis for a decision about the allocation of national resources. Indeed, all the foregoing considerations explain why an interesting attempt begun a few years ago by the United Nations Bureau of Social Affairs to determine criteria for allocating national resources to social services is both very important and very difficult to realize. Considerable progress must still be made in this field before more specific guidelines for operational purposes can be elaborated.

The opinion prevailing at the symposium was that in many developing countries the rise in the proportion of national resources spent on education is approaching or has already reached a stubborn limit. The implication of this proposition for further educational expansion is clear. It is that further substantial growth of enrolments can be achieved only if unit costs in education are reduced, or at least stabilized. But this in turn presents a formidable problem – since in most countries the observed trend has been toward steadily rising unit costs, and hopes for stemming this rise, for example by using new educational media, seem thus far to have borne little fruit. The participants in the symposium did not discuss the whole of this vital issue in any detail, but they urged a much more active participation by educational and human-resource planners in the design of educational reforms and innovations on which educational unit costs eventually depend.

As a further step, the symposium considered the problem of qualitative transformations of educational systems in order to fit the needs of economic and social development, as well as the resources available. In recent years the principal emphasis in educational planning lay very heavily on the quanti-

tative aspects, the main object being to expand the existing educational system as widely and quickly as possible. This often led to imbalances between various levels of the educational system and between the 'mix' of the educational output and the needs of the labour market. Moreover, even where educational plans were based on the study of manpower needs, their principal result was to promote educational expansion without basically changing the schools and universities themselves. There is still need for further quantitative expansion. But educational planners in developing countries increasingly feel that a good deal more stress should now be put on what are usually called the qualitative aspects of educational development, which entail all kinds of changes in the educational system aside from mere multiplication. Among other things, the qualitative aspects entail the adaptation of curricula and teaching methods to the modernization requirements of developing countries, training the new type of teacher, structural and administrative changes of the educational system, improvement of teaching materials, and closer links with the manpower needs of the economy. In short, they entail everything necessary to improve the general efficiency of educational systems, and their relation to productive economic effort.

It was argued at the symposium that it would be easier to perform the foregoing tasks if the notion of quality in education were more fully developed and clearly defined. Without trying in any way to anticipate the results of a subsequent IIEP symposium on this subject,¹ the participants felt that the first step in judging the efficacy of an educational system would be to identify firm and objective criteria for its evaluation, both from inside and from outside the educational system. Such criteria, it was argued, should include – besides educational 'standards', defined in relation to the state of knowledge and to the state of society – the fitness of an educational system to serve the needs of economic, social and cultural development in its particular milieu. These criteria should, of course, be expressed in rather specific terms for practical purposes of planning.²

The symposium also pointed out another way in which the efficacy of educational planning could be greatly enhanced. This was by broadening the concept of educational planning to include not only all types of 'formal' education (general, technical and vocational), but also the main types of 'non-formal' education, such as training on the job, literacy training, agricultural extension and community-development services, as well as local

¹ IIEP/Unesco, *The qualitative aspects of educational planning*, Paris, 1968

² This matter is more fully explored in *The qualitative aspects of educational planning*, op. cit.

apprenticeship schemes. For the moment, no country in the world seems to have such a comprehensive educational plan in this sense; most such plans embrace only formal education, and often only part of that. Yet the comprehensive approach would seem the only practical way in which an optimum use of resources available to education can be achieved.

The symposium did not discuss the detailed practical steps needed to implement the foregoing suggestion – a suggestion that has been echoed at other international meetings. Many obstacles, conceptual and practical, will have to be overcome before comprehensive educational planning moves from the realm of the ideal to the realm of the real. However, the symposium generally accepted the need to overcome by more over-arching planning machinery the present fragmentation of responsibilities for planning the educational services attached to the ministries of education, labour, agriculture, public health, community development and others. It strongly urged that the scope and framework of educational planning should be widened.

Many participants were sharply critical of the often expressed view that planning experts should keep to purely technical matters in their special fields of interest and sit tight until higher authorities have made their policy choices and issued directives to the planners. The view was challenged on two main grounds; first, that a recurrent cause for a planner's difficulty is either the absence of any directives from policy-makers or the presence of policy directives which are too vague or unrealistic or mutually incompatible; second, a realistic and precise political directive cannot be formulated without the help of the planner. It was therefore urged that a stronger relationship should be established between policy-makers and 'technocrats' – a relationship where technical experts might be associated with fundamental policy-making by providing the policy-maker with a better factual and analytical basis for assessing the feasibility, consistency and implications of alternative policies.

The critical views voiced by symposium participants about certain concepts and practices of educational planning – as well as doubts and reservations they had about current methods of assessment of manpower needs – were not negative but constructive in spirit. They gave witness to their increased sense of responsibility for situations where decisions taken in line with their recommendations acquired an irrevocable character. In the period when there was an over-all shortage of trained manpower, uncertainties or errors of estimates of manpower needs perhaps had less significant consequences. Expansion of the educational system in almost any direction was in any case useful and desirable, even if the balance between its various parts was far from ideal. Now, however, with the prospect of growing unemployment of the educated and the imperative need for improved efficiency of the educational system, no expert could be satisfied with a blind policy of indis-

criminate expansionism. It seems to have been this concern which led a large number of participants to take a stand on economic-planning problems, as well as on manpower and educational policies.

II *Employment opportunities and their implication for educational planning*

The spectacular expansion of education in many developing countries since the early 1950s has outpaced the growth of employment opportunities. Typically, educational output rose by 5 to some 15 per cent each year, depending on the country and level of education, whereas the gross national product grew only by 4–5 per cent, and wage-paid employment grew at substantially less than half and often a third of the latter rate. In some countries – Mexico is an example – paid employment remained almost static; in others, e.g. Argentina or Tanzania, it actually fell. This disparity between educational output and employment opportunities has given rise to the phenomenon often called the ‘educated unemployed’. This broad term usually lumps together all educational products – from primary-school leavers to university graduates. Thus in tropical Africa, current unemployment affects mostly primary-school leavers; in more advanced developing countries, such as India, the United Arab Republic and a few Latin American countries, higher levels of the educational pyramid are involved.

What is the real nature of this unemployment problem and to what extent, if at all, can education be held responsible for it?

When the symposium considered this question, the consensus reached was that employment was a function of economic development, and that unemployment or underemployment were mainly due to the inadequacies and distortions of the development process. In developing countries there is an inescapable contradiction between the imperative of raising labour productivity – the chief means of raising living standards to the level of developed countries and of improving the competitive position of their products in world markets – and the huge under-used reservoir of human resources. Modern technologies which are ‘capital intensive’ may raise labour productivity dramatically, but only for the few who get such jobs, for these are labour-saving technologies, befitting economies in which labour is relatively tight and expensive. The opposite course is to adhere to simple technologies which are labour intensive and use little if any capital, but this is hardly a promising route to higher productivity and higher *per capita* incomes.

A compromise way around the contradiction seemed to lie in the use of the so-called ‘intermediate technology’, standing mid-way between traditional

archaic methods of production and the latest capital-intensive technology. This intermediate type of technology permits, in the short run, employment of more human resources and, at the same time, raises labour efficiency. In the long run, however, it tends to widen the tremendous gap which already exists in the productivity of labour between high-income and low-income countries. This, undoubtedly, is one of the reasons why many developing countries continue to display a marked preference for the modern capital-intensive techniques which, they hope, will create conditions for maximizing employment in the long run. As things now stand, the dilemma-haunted problem being considered here is far from being solved. Yet it has to be solved one way or another in order to prevent the high-income and low-income countries being driven even further apart.

The participants were agreed that the main general cause of current unemployment and underemployment in developing countries is not education *per se*. It is the consequence of slow economic growth, greatly aggravated by an unprecedented population explosion. Education *per se* does not generate unemployment, except indirectly perhaps, under special circumstances noted below, which do not apply to primary and general secondary schooling. The central point is that as long as a significant proportion of young people in developing countries – whether with or without education – will in any case be underemployed or unemployed, what education can and does do is to turn this hidden unemployment into a visible and open one. As Erder observed in the symposium discussion, 'education changes the quality of unemployment, by turning uneducated underemployed into educated unemployed'.

A certain ambiguity in the term 'employment opportunities' was also pointed out. Employment is commonly understood to mean work on hire for wages and salary. Yet in most developing countries only a small portion of the labour force is employed in that sense; most of it is self-employed. In underlining this fact, Rao suggested that when employment opportunities for educated manpower were being assessed, the prospects for *self-employment* should also be taken into account. Hunter further suggested that the effect of education on economic development should be measured not simply in terms of paid job creation but also by what education does to raise the productivity of the self-employed.

Where education fails to help employment

While there was no question that education is an essential ingredient of economic development and can be a very fruitful investment, quite apart from being a fundamental human right, it does not follow, the participants warned,

that all investment in education contributes to development. To the extent that educational expenditures in particular directions absorb resources which might be alternatively used for financing more needed and more productive types of education, or other highly productive development efforts, this may actually inhibit growth. This is most conspicuously the case when expensive specialized training is given to much larger numbers than the economy can absorb, while at the same time other types of specialized training are in short supply. Thus the planner cannot settle for the global proposition that education is a good investment in development. He must be more discriminating and seek to redeploy available resources to those areas within the educational system where this productivity is likely to be highest. He must, in short, play the margin at the most promising points.

A related issue is the extent to which education of a wrong type may reinforce and amplify certain anti-development attitudes which are often encountered in societies at lower stages of development. For apart from misusing scarce resources and producing specific skills over and above the needs of development, education may have an adverse effect on employment by strengthening the already existing negative attitudes toward certain occupations and types of work. For example, it may reinforce the already strong tendency of young people to turn their backs on work as agriculturists or manual labourers, even in relatively skilled posts. It is often difficult to enlist students in courses of study and training leading to these occupations; they prefer administrative and clerical jobs; this in turn may inhibit the elimination of certain specific manpower shortages on the labour market and may, to a certain degree, slow down economic development.

Education still tends to be associated with outmoded and unrealistic expectations with regard to earning prospects. This is conspicuously the case, for example, in African countries where educational certificates and degrees are closely identified with job classifications and a salary structure taken over from the colonial period with little change – with extreme salary differentials between the bottom and the top of the scale. In the circumstances, any able youngster naturally wants to climb the education ladder as far as he can in quest of a high-paying desk job, but in so doing he may in fact be by-passing the best chance he has for a paying job, involving the use of his head and hands.

The lens through which the complex impact of education on employment is perhaps most clearly seen is provided by the rural exodus to the urban centres. The exodus results from such mixed motivations as the legitimate hope of the younger generation for change and improvement, and the expectation of higher income together with an aversion to manual work or a desire to escape from the sweat of rural life to an office in the city. Everybody agrees that this continuous 'brain drain' from the rural areas deprives

agriculture of the most dynamic human elements and, while not really easing underemployment in the countryside, heavily aggravates the employment problem in urban areas. Education, undoubtedly, gives further encouragement to this flight from the countryside, though it is by no means the principal, let alone the only, cause. On this point all participants in the symposium found themselves in agreement. Yet, as some of them emphasized, as long as traditional agriculture remained backward and archaic and the rural milieu remained fundamentally conservative and unchanged, school leavers could hardly be blamed for trying to escape from the villages. The case only underlines the urgent need for co-ordinative action on several fronts aimed at rural transformation – a need which for the most part has received much more lip-service than action up till now.

The symposium registered a good measure of agreement on the problem of content of education in relation to employment. In the case of primary-school leavers attracted by the magnetism of the cities, it was argued that even if they had chosen to stay on the land, the bookish education they so often received at school would have helped them little, from the standpoint of employment or self-employment. Hence the need for an increased effort directed at further adaptation of the curriculum and teaching materials and methods to the rural situation.

A further mis-match between the content of education and employment can be seen in the case of graduates who on returning home after a few years of study abroad cannot find useful employment because the training they have received is often irrelevant to conditions in their countries. This is a major contributing factor to the much-talked-of brain drain.

The attention of the symposium was also called to the way the rigid relationship between diplomas, educational qualifications and rates of remuneration may adversely affect employment opportunities. Jolly, enlarging on his references to Zambia and Uganda, demonstrated how the existence of a rigid link between salary levels and educational qualifications creates a situation in which the educational expansion almost automatically leads to an increase in average salary levels, and how the consequent rising cost of labour reduces employment possibilities (including the employment of teachers). A special dilemma is posed by the direct link between upgrading of teachers and an increase in the total wage bill in education. This linkage may inhibit improvement in education by making the use of better-qualified teachers too costly, or conversely it may prevent the expansion of the educational system by absorbing additional funds in higher salaries for the existing teacher corps.

The implication of all this for educational and manpower planning is that the efficacy of the educational effort in relation to employment opportunities is highly dependent both on the social environment and the fitness of educa-

tion itself, as well as on the right balance between investment in education and economic investment.

Positive impact of education on employment opportunities

The discussion of the relationship between education and employment naturally led the symposium to consider the ways in which education contributes positively to employment. The participants found no difficulty in reaching agreement on the very important role which education plays in breaking manpower bottlenecks in strategic fields. By supplying skills which activate physical capital and natural resources, education exerts a multiplier effect on employment and development. The case of India was specifically mentioned. This country could hardly have progressed the way it has done during the past decade without a number of specific educational and training programmes designed to meet the urgent manpower needs for development. A number of participants also stressed the specific contribution education and training can make in supplying the middle-level skills which are nearly everywhere in critically short supply. It was recognized, however, that existing secondary education and vocational training are still very far from performing an adequate role in this respect.

The question was debated of whether education itself, as one of the largest labour-intensive industries, can have a marked positive effect on employment creation. At first glance the effect seems self-evident, since education in many developing countries employs up to 40 or 50 per cent of the total stock of high-level manpower. In Nigeria, for instance, it employs more than industry, commerce and services combined. But however large an employer education may be at the moment, the question must still be asked whether additional resources spent on education would generate as much additional employment as if these were used for other kinds of development activities. If this is not the case, then obviously the allocation of extra resources to education – judged solely from the point of view of creating employment opportunities – would not be rational.

Quite evidently, sound planning decisions can only be reached by examining education's dual role both as an employer of manpower and as a producer of manpower. If an educational system turns out people who cannot find a useful outlet for their activities, the resources expended in the effort – from the purely economic point of view – are unproductive. Even if the argument of alternative uses of resources were put aside, the view that education, by absorbing the largest part of its own product, was directly contributing to employment, could be a temporary illusion. For, each time education provides

employment for new teachers, it is bound in the long run to pour out on the labour market twenty or thirty times more school leavers, diploma holders or graduates. There is danger, then, in arguing the case for education as a creator of employment strictly from the vantage-point of education as an employer, or solely from a short-term point of view.

This danger is compounded, some participants in the symposium emphasized, if we ignore the important question whether education utilizes teachers as productively as it might. Conventional views about the optimum teacher/pupil ratio in various levels of the educational system, for example, find little support in research. We can easily overestimate the number of teachers who can most productively be employed, by deluding ourselves that the route to quality improvement is simply to reduce the pupil/teacher ratio. This route, coupled with the rising teachers' salaries due to higher qualifications and upgrading, may increase educational unit costs to the point where further educational development becomes exceedingly difficult. This has actually been happening in some Latin American countries, e.g., Ecuador or Peru where in recent years the rate of growth of recurrent expenditures in primary education has been much higher than the rate of growth of school enrolments. Undue encouragement given to such a tendency would eventually be detrimental to educational development.

Leaving this question of education as an employer the symposium examined another important way in which education may contribute, if only indirectly, to creating employment opportunities; namely, by stimulating personal initiative and the spirit of enterprise, which may manifest themselves in useful activities not requiring a large amount of money or complex equipment. This contribution, it was agreed, is no less important because it cannot be readily measured. Education unleashes expectations, ambitions and energies which otherwise would remain dormant. By introducing the elements of science, rationality and logic, it generates creative thinking without which no profound transformation of the traditional way of life is conceivable. The new attitudes, values, and modes of behaviour which are spread by education are indispensable conditions in successful economic development. A caveat must be entered here, however, that it must be the right kind of education in the right circumstances: these important benefits do not come automatically.

Finally it was noted that in some circumstances, and given time, even the so-called 'surplus' of educated young people could have a positive effect on expansion of employment. The continuous growth of enrolments and graduations tended to eliminate progressively the dearth of diploma holders and graduates and to narrow down the salary differentials which now help to inhibit employment. The latter effect, however, usually does not occur until some surplus supply appears on the labour market. Even then the increased

supply may not have the effect indicated, because of traditional institutional arrangements and rigid relationships between the remuneration scale and educational qualifications.

In summary, though our knowledge of the precise contribution of education to economic growth is still far from being adequate, there is enough evidence to show that even primary education may help significantly to increase productivity of labour; it thus generates economic development which in the long run maximizes employment. Similarly, education increases the mobility of labour and thereby removes obstacles to economic growth. However, we must not expect that education can do for employment what the economic process fails to do. The school performs in society a multiple function, but it is by no means omnipotent. Education can play a positive role in enhancing employment only in conjunction with other measures, and a crucial one is investment in directly productive sectors.

Implications for educational planning

The ultimate aim of the symposium's discussion of the relationship between education and employment was to examine the question of what educational planners can do to enhance the positive effect of educational development on employment. In general terms, the answer given was to stress again the need for the fullest possible integration of educational planning into over-all economic planning: first, to determine the share of education in the total resources available for development in relation to other sectors; and second, to allocate resources within the educational sector among various levels and types of education with due consideration to future manpower requirements and national priorities.

An important distinction was made by Harbison between (a) manpower requirements as identifiable needs for persons with particular education, training and experience; (b) absorptive capacity, or a country's ability to provide useful employment for persons with certain educational qualifications; and (c) demand for education, in consequence of social and political pressure for various kinds of education. The distinction, in turn, triggered a debate about whether absorptive capacity should constitute a limit for educational expansion, or whether educational expansion should continue despite the growing underemployment in rural areas and mounting unemployment in urban areas.

The symposium discussion produced no single answer to these questions. The answer will vary according to countries and to levels and types of education. Much will depend on resources at the disposal of a nation. If it can afford to give more education to its population than can be immediately

used, there seems to be no reason why it should refrain from doing so. If, as is the case of most developing countries, its educational budget is strained and some forms of education received are not used for one reason or another by the recipients, the situation obviously calls for a reorientation of educational effort. This is mostly a problem of priorities within the educational system rather than of resource allocation to education as a sector. Since non-utilization of education received is tantamount to a waste of resources, preference should be given to those types of education which are of crucial importance for development and which are likely to be of no waste or only of minimum waste. But in applying this test, development should be conceived of in much more than narrow economic terms; social development – a positive change in the social milieu to which education can contribute – may be as indispensable to sustained economic growth as a flow of capital.

Most participants were of the opinion that the test of contribution to economic growth should not be a major consideration with respect to primary education. The development of primary education as a fundamental human right and as a prerequisite of social development is a matter of social policy. It cannot be based on cost-benefit analysis of alternative use of resources, for its full effect is not measurable in strictly economic terms. In more than one country with severely limited resources, emphasis has been given to universal primary education or the elimination of illiteracy (Japan at the end of the nineteenth century, the U.S.S.R. in the early twenties, mainland China in the fifties, Cuba in the sixties). India inscribed it in the constitution, though its implementation had to be postponed for lack of resources and will be achieved only by stages.

The cardinal aim of primary education, it was further said, is not to prepare the person for immediate employment but to give him a good start in life. In any event the child may be too young to take a job. So the lack of employment opportunities has, strictly speaking, nothing to do with accelerating or slowing down primary-education development; it is largely a question of how fast the country can afford to move toward universal primary education. A real danger is that a decision to slow down will affect the future of the country for fifteen or twenty years to come – when the whole situation may be quite different. Yet in that different situation, the earlier decision to slow down will directly bear on equality of opportunity, on potential contributions to productivity and new systems of values, all of which are associated with education and with national development. It was further argued that the decision to freeze primary education would be very hard to realize politically. The experience of countries such as Tanzania, which try to maintain for the time being a constant ratio of primary enrolment relative to youth population, is too recent to prove its feasibility and applicability elsewhere.

Other symposium participants argued that the development of universal primary education, just like any other type of education or social service in scarce supply, should be subordinated to a general principle of contribution to economic and social development. Knowledge received but not used is useless; equality of opportunity has little real meaning if the opportunity for further study or work is in fact negligible; contribution to productivity remains only potential as long as the person is unemployed. What really matters in all this is that some significant resources available for investment were diverted away from productive use. The symposium failed to reach a consensus on this point and it was agreed that further evidence on the results of alternative approaches to primary education must be accumulated before the discussion could be fruitfully pursued. Nevertheless, the general sense of the meeting was that the scope of human resource planning must be enlarged to include all levels of educational attainment and not just 'secondary plus', since the great majority of the economically active population in most African countries has either very little education or none whatever. To omit the bulk of the population from the scope of manpower and educational planning would have a plain and potentially harsh meaning – namely, that a conscious effort to provide fruitful opportunity of productive employment is restricted to approximately one-tenth of the nation. It was argued that while something of the sort might have been possible in the past, the by-passed nine-tenths of the population would hardly allow it to happen in the next decade or two.

The symposium participants showed more unanimity with regard to linking educational development at second and third level to employment opportunities. The situation varies considerably in this respect from region to region. Whereas in most countries of tropical Africa there is still an acute shortage of university graduates in nearly all subjects – and the number of secondary-school leavers is either below or roughly in balance with demand – in the United Arab Republic, Nigeria and a number of countries in Asia and Latin America the situation is different. In India, for instance, educational output is well beyond employment opportunities both for secondary-school leavers and for graduates other than in medicine and engineering, at least in terms of the types of jobs with which these levels of education were formerly associated. Since the early 1950s the proportion of secondary-school leavers registered in employment exchanges in India rose from 50 to over 80 per cent of the total. This relative over-production of persons with general education has led to an over-all inflation of educational qualifications and to a typical under-utilization of the educated: graduates in arts and humanities take up jobs which can be done with much lower academic qualifications. As the number of graduates increases, they move into positions formerly held by secondary-school leavers who, in turn, drive out people with lower

educational qualifications. The chain reaction generated by the surplus of educated shows that the absorptive capacity of an economy is something more flexible and less rigid than the concept may suggest. But the burden of the problem of unemployment is by no means solved by this flexibility. It is merely shifted to the shoulders of the less-educated or uneducated.

The evidence gathered so far suggests that the current unemployment among university graduates in developing countries is greatly aggravated by a maldistribution of students by courses of study. The surplus of graduates in arts and humanities goes, typically, hand in hand with a fairly considerable shortage of persons with technical and science-based preparation. The solution to this particular problem lies in bringing the development of higher education into closer harmony with manpower needs. But the problem will still remain. It would be wrong to assume that employment opportunities for persons with a science and mathematics bias are limitless. Some unemployment among geologists and civil and mining engineers has already been noted in India; similar difficulties in placing engineers have been reported in countries as different as Argentina and Burma. Though the absolute numbers involved are small and in each case there might be some specific reasons for the unemployment – such as lack of mobility, organizational shortcomings, or an inadequate number of technicians and other supporting personnel – the fact is that the ability of most of the developing countries to absorb specific high-level skills is limited. Current manpower shortages may be very acute but the actual numbers required are relatively small and a small rise in supply may quickly revise the situation. Given the normal capacity of modern educational institutions and adequate inputs from the lower echelons of the educational system, the saturation of the labour market in developing countries with 'hard' specialized skills seems to be only a matter of time. From there on, the process of upgrading the educational qualifications for various job classifications will accelerate.

What should educational planners do in view of this imminent situation? Should the output be matched to employment opportunities by cutting down the university enrolments? If so, how would this affect the unit cost of higher education, which is already excessive in most developing countries of Africa owing to the uneconomically small size of the universities? Besides, would it be possible politically? If not, what future is in store for these highly expensive products of the educational system, apart from accepting jobs which do not really require their level of educational qualification, or else moving to greener pastures abroad?

Nobody contested the view that the developing countries will logically tend to have an over-all over-production of high-level skills if the present rate of their economic growth is not changed. Yet no immediate practical solution to the matter seems to be in sight.

This has proved to be a highly emotional issue. Characteristically enough, participants in the symposium – economists included – were highly averse to any idea of contracting the educational system. On the contrary, many spoke of the internal dynamics of education which, despite all the constraints and rational decisions, would tear them asunder. There is a sort of natural sequence of events: once primary schools are expanded, an increased demand for secondary education will inevitably follow and, with a few years' interval, for higher education as well. This is an irreversible trend. All that can be done in practice – so it was argued – is to regulate the flows of students in relation to employment opportunities by tightening selection at various stages of the educational process, but not by closing down educational institutions.

What would seem to be significantly more appropriate than simply to reduce the quantity of education given, would be to increase the general efficacy of the educational system by adapting the content of education to priorities and strategies of national development. This problem has been for some years at the centre of educational debates in many developing countries. Whereas in the past the content and curricula of education were the exclusive concern of educators, now it has become increasingly evident that other experts, including manpower specialists, should be associated with this work. The joint efforts of educationists, sociologists, ethnologists, economists and manpower planners are urgently needed in order to adapt the content and form of education to the prevailing conditions in which those who receive it are likely to live and work, and to make education generate new values and attitudes toward manual labour, agriculture and technical occupations, toward castes (in India), superstition and other common prejudices. This is a new and complex task. Yet the fact that education has been relatively rapidly adapted to the imperative of promoting national consolidation and of fostering national conscience in newly independent countries may itself serve as an encouraging sign and as a precedent showing that such reorientation is within the realm of possibility.

While the symposium placed a heavy emphasis on altering attitudes through education, at the same time it affirmed that this campaign may end in failure – as did so many isolated attempts in the past – unless the environment is changed first or, at least, simultaneously. The reason why such attempts failed there in the past was that primary-school leavers very rightly observed that the life which they had been asked to live in rural areas was less attractive than even the lot of the unemployed in the town. To avoid this mistake in future, policy-makers who look for education to generate new attitudes and new systems of values must be prepared to carry out vigorously policies designed to bring about thorough changes in the environment and institutions of society. If this is done, the community will

get the highest dividends from education; if it is not done, the only result will be a grave social conflict.

An important conclusion which emerged from the discussion was that educational planners in most countries had not so far made any systematic use of unemployment statistics, even where they are available, as an indicator for educational planning. Even when serious studies of unemployment were undertaken, no attempt was made to assess the level of educational qualifications of the unemployed. We are still woefully ignorant of the quantitative relationship between educational attainment and unemployment. To fill this gap, and to study educational structure of unemployment in a way similar to that which has already been done with respect to occupational composition of the labour force, will open new possibilities for making more precise guidelines for educational planning.

III *Modernization of the rural sector and its implication for educational planning*

One of the basic choices facing policy-makers and planners in developing countries is the relative emphasis to be given to the development of industry and agriculture, or, in more general terms, to the modern and traditional sectors. This is a paramount economic and political choice. The development of industry ever since the industrial revolution of the eighteenth century in the United Kingdom has been the *route royale* of economic progress and the only known means of raising by many times the productivity of labour throughout society. Yet a point touched on already is worth reporting. It is that recent experiences in developing countries show that a bias towards industrialization does not necessarily provide a universal answer to all development problems in all countries, irrespective of their endowment in natural resources, stage of development, size of economy, state of human resources and other important constraints. All these factors combined determine different strategies of economic development which are expressed in national plans.

Whatever strategy for development is finally adopted, it has to take into account the following two considerations. First, the population growth at an average rate of 2 to 3 per cent a year makes it imperative to increase, at least in the same proportion, the production (or import - which has to be paid for by some additional exports) of food and agricultural raw materials. Second, the development of modern industry with its characteristically capital-intensive techniques can absorb but a small proportion of the surplus labour resources of rural areas. This heavily underemployed population can

subsist for the moment only by the means which are at its disposal, that is, by agriculture or by simple crafts. These two considerations show how important the rural sector is for any developing country. An important third point may be added, namely, that for many countries at an early stage of economic development, the human and natural resources of the agricultural area will remain for some time to come the chief assets for generating domestic savings for investment in the modern sector, and the chief means of providing needed supplies of foreign exchange in the international market.

This is not to say that agricultural development should receive in all circumstances and at any time priority over the development of industry; it is rather a question of achieving the right balance of emphasis. Even if there were no other factors militating against such a policy (as, for instance, the low rate of economic growth), instability of the world markets and the relatively slow growth of demand for products of primary-producing countries would alone suggest a more differentiated approach to choosing priorities for national development. The question, as one participant put it in summing up the general feeling, is by no means 'either, or'. It is both a matter of balance between various sectors of the economy and a matter of timing. What the right balance is for each individual country must be decided separately in each particular case.

While there seems to be no single answer in theory and still less so in practice for the whole developing world, the common fact for many countries is that the agricultural sector in general and traditional subsistence agriculture, particularly in Africa, play a very big role in their economies. The overwhelming majority of the population in nearly all developing countries live in rural areas and are likely to remain there for decades to come. Their vital interests cannot be neglected. The sector which is left to stagnate will sooner or later become an obstacle to general progress. The dual economy with a small dynamic modern sector and a huge static traditional sector is doomed to failure. Development planning must embrace the whole national economy, including traditional subsistence agriculture. Modernization and the cultivation of the vital interests of the traditional sector, which must go along with industrial revolution, has thus become an imperative of development.

It was pointed out in this connexion that the traditional sector and agricultural sector are not identical notions. The first also includes – as was shown in the paper by Callaway – traditional crafts in urban areas, as well as local retail commerce; the second consists of traditional subsistence agriculture and modernized cash agriculture. Similarly the term rural sector has wider meaning than the term agricultural sector because it also includes small cottage industries, transport and local distribution systems. These

notions are like intersecting circles, some parts of which are common and some are not.

The problem of priorities in economic development clearly goes beyond the framework of the symposium devoted to educational planning. None the less, the question could not be escaped, simply because education alone cannot bring about the desired transformation of the rural sector. Unless agriculture comes to the forefront of national policy with regard to resource allocation, to appropriate land reform and other essential components of agricultural change that will yield higher incomes to farmers, education will never play more than a marginal role. But in turn, all these other measures will bear little fruit if not accompanied by a vigorous and appropriate educational effort. This interdependence of economic policy and educational policy was underlined by the symposium. The consensus was that when correlated steps toward agricultural and community development are taken, education can serve as a powerful accelerator of rural modernization.

This task poses three kinds of questions. What are the manpower and educational needs required for the modernization of the traditional agricultural sector? What are the best ways to meet these needs? How can one make sure that the people who have been trained for agriculture actually go to work in this field and embark upon it as a lifelong career?

Manpower and educational needs of the traditional rural sector

As noted already in this report, most surveys of high-level manpower requirements carried out in developing countries were focused on the modern sector of the economy, including industry, services and modernized agriculture. But they largely ignored the needs of traditional subsistence agriculture and local crafts. Some symposium participants, however, argued that these needs in fact had been taken into account - that government programmes of agricultural extension, community development, health improvement, adult literacy, guided settlement schemes and road construction envisaged rural transformation and development. To the same end, the programmes specifically included training for co-operative managers, book-keepers, cotton-gin mechanics, motor-vehicle mechanics and for many other skills for which there were prospects of paid employment. But other participants asserted that these surveys usually neglected the needs and prospects of self-employment in agriculture and crafts and did not even attempt to evaluate such needs. The number of persons trained for the agricultural sector was thus drastically below the real needs and their level of qualification often did not correspond to actual requirements. In India, for instance,

until recently little provision had been made for training middle-level skills for agriculture; in all developing countries generally the main concern has been over the highest-level skills. One of the paradoxes of the present situation is that, despite a considerable unsatisfied demand for all types of skills in the agricultural sector, a significant proportion of this manpower works outside the sector, making the shortage of skills for modernizing agriculture even more critical. While the lack of supporting personnel has certainly something to do with this situation, the main reason for it is generally a low level of remuneration and lack of material and moral incentives.

The question of what kind of education is most urgently needed to bring about modernization of the traditional sector gave rise to somewhat divergent opinions. Some participants believed that it was not lack of general education that was mainly inhibiting agricultural advance. Nor was it the much-criticized school curricula, though they could be considerably improved. What is grossly insufficient, they argued, is the educational effort which would directly increase the productivity of agriculture. Others felt that opening the minds and changing the mentality of cultivators should come at least one step before giving them technical advice on how to improve farming methods. Unless the farmers were fully acquainted with the advantages and possibilities of modernization, they would hardly be receptive to agricultural innovations – that without functional literacy of the adult rural population and at least some education given to generations which are coming of age, this would be very hard to achieve indeed. This difference in emphasis was partly the result of varying local situations with regard to relative development of different levels and forms of education. It was recognized that both types of educational action were necessary and that to instil the dynamic impulse for improvement was as essential as giving good technical advice. This is probably a matter of timing, the second coming slightly after the first.

Where all the participants were in agreement was that educational effort should get down to the farmers themselves. The distinctive fact about traditional agriculture is that it is a sector based predominantly on self-employment. Until there is a marked improvement in farmers' income as a result of cash-crop cultivation, very few peasants, if any, can hire the services of specialized manpower; they work within a family-type enterprise and rely mainly on themselves. It was therefore emphasized that self-employment and development-oriented education, which can stimulate personal initiative, would contribute most effectively to modernization of the rural sector.

This modernization requires, at bottom, three main levels or types of manpower. The first level are farmers and other direct producers among whom it is essential to identify the innovating farmers (*animateurs*, in French-

speaking Africa), those awakened to the notion of progress. In fact, in many countries during the past few years, the emphasis in training has shifted from potential farmers, who may never go into farming, to practising farmers. In the practice of the matter this tends to raise the age of trainees. But it also reduces the length of training. This type of training in practical skills is destined essentially to bolster self-employment.

The second level are technicians and intermediate skills – field assistants or agricultural instructors (*moniteurs*, in French-speaking Africa), extension workers, managers of co-operatives and so on. Their function in agriculture is similar to that of diploma holders *vis-à-vis* graduates in engineering. They must possess applied practical knowledge and managerial ability and serve as local advisers to farmers. These are usually paid jobs.

The third level are top-level cadres – administrative and professional. They include agricultural officers (*ingénieurs*, in French-speaking Africa), agronomists, veterinarians and agricultural scientists – that is, persons mostly at a policy-making level. A characteristic feature of this category of agricultural manpower is that, in nine cases out of ten, farmers are absent from this group. Those who engage in agriculture at this level look on it as a profession and a highly paid job.

One of the basic conclusions of the symposium was that all three levels of skills were essential for agricultural advance. It would be wrong to consider them in terms of hierarchical superiority. Their competence, training, and practical knowledge are fundamentally different and complementary. However, the progress in modernization of traditional subsistence agriculture will eventually depend on the number and quality of cultivators and other direct producers trained and assisted by the extension service. Since the first and second levels have been neglected in most developing countries, they should now be given a higher priority in training. Developing the spirit of responsibility and high moral qualities in future extension workers and agricultural instructors must receive as much attention as their technical training.

As for the quantitative assessment of manpower needs for the traditional agricultural sector, the symposium could not suggest any method or technique other than empirically established ratios of the number of agricultural instructors per thousand of rural population and of high-level cadres in relation to instructors. The staffing figures advanced in two of the symposium papers (by G. Hunter and R. Dumont) refer mainly to savannah regions of tropical Africa and should be treated with caution when applied to other geographical areas. In any case, they may be used as orders of magnitudes rather than staffing norms.

In the light of the discussion, it appeared that training rural teachers and agricultural instructors should rank high in the scale of manpower needs

for the traditional sector, for they would be in direct daily contact with the population and on their moral and professional qualities the success of the whole operation would largely depend.

The symposium stressed women's education as one of the most important factors in transforming the way of life in traditional rural communities and suggested that a prominent place be reserved to it in all educational programmes designed for the modernization of the traditional rural sector.

How to train the required skills

A key question which arose in this same connexion was how to gear primary education to modernizing the traditional sector, for this type of education has been more widely spread than any other. Moreover, it is often held responsible for driving away the most dynamic elements from the countryside into the cities. Despite one or two dissenters, most members of the symposium concluded unequivocally that the primary school was not the place in which to teach agriculture; it was the place to give an elementary education. Two extreme views – one that rural schools must follow exactly the same curriculum and syllabus as urban schools so as to give all children an equal chance for career choices, and the other, that rural schools must primarily, if not exclusively, train students for agriculture – were both found one-sided and unsatisfactory. It was felt, further, that the present divorce between curricula and environment must be eliminated – that the content of education and teaching methods must be adapted to the conditions in which pupils live and are likely to work. Primary schools in rural areas must also give a minimum of practical agricultural knowledge which is indispensable for any educated person whatever career he might embark upon. But educational reforms to this end – if not combined with economic and social measures described above – will be far from sufficient to keep people on the land, and the symposium warned against a widespread illusion that still persists to the contrary.

All agreed that a crucial service which primary education can render to rural development is to instil in pupils a new outlook on agriculture as an occupation, to rehabilitate the work on the land, and to heighten the prestige of the modern cultivator. Yet all this hoped-for important service will again become little more than wishful thinking – so the symposium was told – unless there was a change in outlook on these matters at the level of political leadership and a bigger cash reward for the farmer resulting from a radical change in agriculture itself.

Even more important than the reorientation of primary education would seem to be a fresh and greatly increased effort at the post-primary level.

Indeed, the growing number of primary-school leavers have very little chance of continuing their studies, since opportunities for secondary education are lagging desperately behind and entry qualifications to major training schemes are steadily rising. Many of the school leavers, especially those leaving after four years of study, are too young to join the labour force. It may take a few years before they actually start working, if they are lucky enough to find employment. Meanwhile, they are left completely to themselves. This never happened in the traditional system of education where all persons were wholly integrated with the community through age groups from childhood to their old age. There is an urgent need to fill this newly emergent educational vacuum, and participants generally supported a remedial idea Hunter advanced in his paper about how to cope with this increasingly serious social problem. The idea called for pre-settlement farm training, youth service, national service, community development, co-operatives and voluntary agencies action – all designed to preserve the morale and improve training and practical skills of school leavers. It was also recognized that more widespread simple craft and commercial training was badly needed in developing rural areas to fit primary-school leavers for the increasing range of employment, once the agricultural revolution is started.

Many participants in the symposium felt that in the task of modernizing the agricultural sector, a major educational effort should be addressed to services which provide advice, technical assistance and training in various forms to direct producers. The first priority of such an effort should go to agricultural-extension work. Its development, it was argued, must be brought much nearer to a parity with the school system. The role of extension services must also undergo transformation: they must change from being purveyors of government orders and instructions to being advisers, innovators and helpers to the farming community. This far-reaching proposal for a major redirection of educational effort in rural areas from formal to non-formal education must, of course, be carefully weighed in the light of local conditions and national priorities of individual countries in order to avoid action based on hasty and superficial generalizations. Of a piece with this suggestion was the proposal advanced in another symposium paper (by Dumont) for a composite school-farm, aimed at combining primary education with productive work. This was not meant as a substitute for areas an elementary education of the common type, the question of composite schooling would not arise. It is precisely because this is not possible, at least in many countries in tropical Africa, that the idea of school-farms, which would cost little to the community and would soon become self-sufficient, was put forward as an alternative to no modern education at all for many

children of school age. The implementation of this scheme involves two main difficulties. One is the risk of enlarging the gulf between the rural and urban population. The other concerns the need to train a new type of teacher. Both difficulties are real and serious. They should be weighed against the needs of rural transformation and the consequences of leaving a significant proportion of the school-age population outside any school system whatsoever. The best way to evaluate this scheme, it was felt, would be to test it in practice.

The symposium strongly favoured an evaluation of the rich experiences accumulated in developing education in rural areas through Unesco-sponsored pilot projects, notably in Madagascar (low-cost rural schools and training colleges for a new type of teacher) and Ivory Coast (rural craft centres). This would be similar to the evaluation recommended by Unesco with regard to literacy projects. In-built evaluations must, in fact, be an integral part of educational planning and should be based on a set of criteria covering the cultural, social and economic aspects of national development. Without being exhaustive, these criteria must, in particular, enable an evaluation to be made of results achieved in relation to: (a) performance of conventional education establishments; (b) objectives set out by the planners; (c) direct and indirect impact on environment; (d) short-term and long-term consequences.

The expansion of educative services in rural areas will inevitably require additional resources. Participants in the symposium noted with interest the proposals (in Hunter's paper) aimed at finding such resources, notably by carrying extension services on the profits of high-value crops and by concentrating resources on the most promising agricultural spheres. The proposals, however, were not discussed in detail, though it was observed that many improvements in agriculture could be achieved promptly through education without a great expenditure of resources, but solely on the basis of existing knowledge. The importance for the whole of savannah Africa of inducing peasants to sow early (emphasized in Dumont's paper) is just one example among many that could be cited in the foregoing connexion. The training of producers, in the opinion of participants, had to be essentially practical and cheap, and the conditions of study had to be in touch with external realities. The negative effect of external aid being used for setting up lavish facilities was pointed out and the need to resist any such trend was strongly emphasized.

Career choice

Producing the required skills is generally recognized as only half the battle. The participants in the meeting showed that they fully realized the diffi-

culties involved in channelling into agriculture the manpower produced by education and training. The irony of the situation is that agriculture, which is the basic occupation of mankind, let alone the developing countries, and on which the world food supply depends, is commonly looked upon as an inferior occupation that must be avoided by all intelligent people capable of doing something else. Education has been viewed mainly as an escape route from a life in agriculture, and the pressure of parents for more and wider-spread education has been strongly motivated by the desire to provide their children with opportunities for employment outside agriculture. Neither they nor their children have considered education as a force that may improve their lot within agriculture. A major change in outlook is still needed before that new point of view can take hold.

Here we come up against the limits of effective educational action. The basic assumption of the symposium was that the yield of rural education depends on a national determination to create a new agriculture with all the economic and social measures this implies. Until agriculture produces a proven cash income for its practitioners, no education – indeed, no other force in the world – would keep people willingly on the land. A demonstrated success in raising farm incomes substantially is the only practical means of attracting people to agriculture. This is where the role of incentives comes in. The need to shift the balance of remuneration in favour of rural areas was unanimously urged by all the participants. Various ways to achieve this were suggested, and doubts were also voiced about the feasibility of some of the proposed schemes. But the principle of raising the cash yield from farming was found to be of paramount importance to the success of educative action in rural areas.

IV Implementation of educational and manpower plans

The symposium gave considerable attention to the problems of implementing plans. It was noted that while many developing countries in recent years have produced educational plans, only a few have as yet made an over-all estimate of manpower requirements or devised educational plans which give due weight to manpower needs. Moreover, in only a few countries have plans reached the stage of a relatively full implementation. Indeed, even when educational facilities are born, the plan may have had little to do with the event. These realities explain why educational and manpower planners have become increasingly concerned over the fate of plans once they are framed and approved by the political authorities.

Essentials of effective planning

Participants in the symposium felt it was useful to look at the problems of implementation in terms of the factors which limit the effectiveness of planning. On this score, three main reasons were cited for the non-implementation of educational and manpower plans: the plans were unrealistic and therefore not feasible; there was no real will to implement them; or the required policy instruments and administrative machinery were lacking.

Planners necessarily work within a given set of parameters in their environment, and these parameters delimit the options for action in any country, irrespective of its stage of development. The constraints can take different forms. They can be economic (absolute limit of real resources), political (government attitude to planning and a reasonable degree of continuity in government leadership), social (existing social structure and the attitude of vested-interest groups), administrative and institutional (availability of trained personnel and appropriate bureaucratic machinery), and technical (insufficiency of factual information and limitations of current methodology).

The foregoing external factors cannot be reduced to a common denominator or expressed in terms of plan indicators. Indeed, the private sector of the economy may be sufficiently autonomous to impose limits on planning and, in certain cases, to prevent unduly rigid planning of the public sector. The educational system has its own internal dynamics, as in the relative independence of increased enrolments growing almost automatically from one educational level to another. Similarly, the social pressure for education has a quasi-spontaneous form which reduces a planner's freedom at any moment to increase enrolment ratios, let alone freeze or cut them down. All these factors, none the less, have to be allowed for in development planning. A plan that ignores them is doomed to failure.

To what extent can the constraints be modified or attenuated? A mere glance at the list of those cited a moment ago is enough to see that some cannot be changed at all. No planner, for example, can alter at will the constraint represented by scarce material resources. Thus whatever might be the need for more education in a poverty-stricken country like Tanzania, its average annual *per capita* income of only £20 – coupled with the fact that the unit cost in secondary education is £400 and in higher education is well over £1,000 – rigidly limits the growth rates of enrolments and generally reduces a planner's manoeuvrability to a relatively small front. The same is true for countries like Zambia where financial resources are relatively more plentiful but where the trained manpower shortages weigh heavily in all decisions bearing on the growth rates of the economy and of the educational system itself.

The constraints which are less rigid held the main attention of the symposium, and the members considered ways for enhancing – within limits – the efficacy of government action in the planning process. In particular, three facets of plan implementation – administration, the system of incentives, and the evaluation of the progress achieved – were considered.

Some administrative and organizational factors

The chances of implementing a plan partly depend on the way it has been prepared. Symposium participants agreed with Grégoire's view that the broadest possible participation in the preparation of plans was preferable to the more rapid and apparently more efficient work of an isolated small team of technicians. For one thing, departments would carry out their responsibilities for implementing a plan only if they had been locked into its preparation. For another, to ensure the execution of a decision, it was more important to persuade the departments of its merits than to impose the decision on them as if by decree. Educational and manpower planning must therefore be organized in ways where all parties at interest will effectively participate at every stage of the planning procedure.

As a related matter, strong emphasis was placed on the need to build a communications network linking the over-all planning authority, the unit engaged in assessing manpower requirements, and the planning office in the ministry of education – besides establishing close relationship between the educational-planning office and relevant departments in other ministries responsible for specialized education and training, such as labour, agriculture, health, community development and others. While the structure of such a network is special to each country, all participants in the symposium stressed the general importance of a systematic organization of communication within the various parts of the public administration, and a new type of relationship between the planner and the policy-maker. In fact, it now seems to be recognized that the separation of duties between the latter in the sphere of planning implementation is less rigid in practice than in theory.

The discussion underlined a new and growing awareness that administrative co-ordination in the planning process calls for far more than the mere creation of committees on which various departments will have their representatives. It calls for new-style relations between the different government departments, the planning authority and the government. It calls for on-going confrontations among the departments so that the aggregate of their individual decisions will add up to a coherent over-arching line of action by the government. This view necessarily extends the concept of implementation beyond

the former boundaries where a plan was looked upon at best as being merely a guiding outline for the co-ordination of educational and manpower policies.

A further – and major – conclusion emerged from the symposium's discussion of the administrative aspects of plan implementation. It was that the needs of national development would not be met merely by reaching the quantitative targets of a plan – as, for example, by setting up a given number and kind of new facilities and by training the required number of people with particular skills. Planning which limited itself to such action would achieve only part of its objective. Human-resource planning can be said to achieve its true goal only when trained persons actually fill the positions for which they have been trained.

This line of reasoning brought the symposium to a point where it reviewed the policy instruments used in directing the flows into and out of the educational system.

Instruments of implementation

These instruments fall roughly into two groups, one dealing with the output of the required skills, the other with their utilization. There is no rigid borderline between the two, and many of the instruments serve both purposes.

Among the tools designed to channel the flow of students into the courses of study and training which lead to occupations crucial for development, vocational guidance was recognized as a useful aid. In its simplest form, it consists of informing secondary-school students of employment possibilities, of the most-needed occupations, conditions of work, remuneration scales, prospects for advancement, and so on. This information is often published in special loose-leaf guide-books (enabling it to be kept up to date) in order to facilitate the choice of careers by pupils with the help of the teacher and career master. Recent experiences in Tanzania and Zambia, it was noted, show that vocational guidance has an appreciable impact on pupils' preferences, notably for the usually neglected teaching profession or for agriculture.

The use of this instrument poses its own problems. At what level should vocational guidance be brought into the educational system? Should it be done by specialized personnel or by the teachers themselves? If the first alternative were adopted, what training should be given to career masters? How should the results of their work be evaluated? Though the answers to these questions were not entirely clear, the symposium felt that the results obtained so far justify a wider application of vocational guidance.

The most effective means of implementing educational and training plans for high-level manpower, it was argued, is undoubtedly the scholarship system. Different forms of such a system include government-controlled bursaries schemes, such as those now in force in Tanzania, under which scholarships are given only to those who agree to (and qualify for) training for high-priority occupations; differentiated bursaries schemes which fix the size of the scholarship according to the importance of the occupation to national development; control over scholarships for study abroad offered on a bilateral or multilateral basis, and which are accepted only to the extent that they correspond to the country's manpower requirements. In the border zone between implementing educational plans and manpower-utilization plans stands the tied-bursary scheme, which is widely used in east European countries, in Tanzania, Tunisia and with some modifications in many other countries. It binds the recipient to serve from three to five years after graduation in whatever job he is directed to by the government. Akin to this is the system of loan scholarships, where students bent on higher education can secure loans bearing little or no interest and no repayment for the first few years after graduation. It is commonly the case in some countries – the U.S.A. – for one – that if students enter professions such as teaching for which there is a great public need, as much as 50 per cent of their loan may be rescinded.

The discussions at the symposium and the comprehensive case study of Tanzania (in the paper by Thomas) showed that the scholarships policy had increasingly become a practical tool of implementation of plans in some countries. This instrument has the advantage of influencing the flows of students without introducing a change in the salary structure – an infinitely more difficult task to achieve. Despite the manifest need to distribute scholarships in accordance with public interests, there is still some opposition to this principle of control in many developing countries on the ground that it is contrary to the principle of academic freedom and freedom of the individual to make his own career choice. As if in answer to this objection, several participants in the symposium noted that when education was given at the community's expense – and often at the expense of not meeting the needs of many other individual members of the community – those who benefited from education owed a debt to society and an obligation to compensate others, at least in part, for the lifelong privilege they received. What is at issue, therefore, is not a simple question of freedom and compulsion, but an issue of equity and justice as well.

Participants in the symposium showed much interest in a proposal to set up a system of effective international control over the flow of skills from low-income to high-income countries in order to avoid a paradoxical situation where there might be, for instance, as many Malagasy doctors settled in France as French doctors practising in Madagascar under technical-assistance

schemes, or 4,000 practising Indian doctors in the United Kingdom at a time when the public health system in India itself is utterly inadequate. A further suggestion was to impose a tax on the import of skills from developing to developed countries to be paid by the employer in order to create disincentives for the 'brain drain'. Restrictions on the right of skilled national cadres to take jobs abroad were also urged by some in order to make education beneficial to the community as well as to individuals – even at the inescapable price of a measure of compulsion and control. These ideas, however, were largely tuning-up exercises. It was recognized that the whole of the so-called 'brain drain' problem needs further study before coherent guide lines and firm recommendations for policy-makers could be formulated.

Incentives, moral and especially material, are rightly regarded as a major factor regulating spontaneous demand for education and movements of manpower in and out of various occupations. It is no less true that, of all the instruments of manpower-plan implementation available to policy-makers, incentives are the hardest to handle, for they directly concern the most vital interests of all groups in society.

The consensus of the symposium was that the existing salary structure, particularly in Africa, exaggerated the disparity in earnings between skilled and unskilled manpower, while rigid links between educational qualification and remuneration were highly prejudicial to the rational use of human resources. Such wide gaps in salary structures, all speakers agreed, far exceed any useful economic function and are the cause of considerable waste when, for instance, the ratio of middle-level to high-level manpower is well below normal. Not only are these excessive differentials wasteful, but, as was noted earlier in this report, they result in misallocating manpower resources and in increasing inequalities and frustrations in society.

All participants in the symposium readily agreed that such disparities should by all means be reduced, if ways could be found, and that the most important single change needed in salary structure was a shift in favour of farmers' income. However, they also recognized that the task of overhauling a national salary structure is shot through with many difficulties. Among other things, such an overhauling would have to take into account the complex factors of the private sector, foreign enterprise, international organizations and technical-assistance salary scales. The logical way of rationalizing the salary structure would be to add to some salaries at the expense of others, but it was observed that probably the only practical policy was to add to some without removing from others. This obviously sets narrow limits for direct action by policy-makers in using incentives as an instrument for implementing manpower plans. For this reason, indirect equalizing measures such as heavier taxation on luxury consumption by high-income groups or their paying for education, medical and other subsidized or free-of-charge services may be

of some interest in manpower implementation. In any case, the symposium strongly urged the importance of making real progress in the highly sensitive field of income distribution if manpower and educational planning were to be effective.

The need for evaluation

The implementation of a plan thus entails a wide area of public and private activity. It differs from the other so-called traditional tasks of government by the opportunity it provides for comparing results with objectives. A systematic evaluation of results, both short- and long-term, as was stressed at the symposium, is an essential means of plan implementation. But this does not mean merely verifying whether the outlays for investment and recurrent expenditures provided in the plan have in fact been allotted, or checking the extent to which they have been spent within the agreed dead-lines. It is also a question of seeing whether school buildings have been erected, whether students are actually flowing into the courses of study envisaged in the plan, whether graduates and diploma and certificate holders are choosing the careers for which they have been trained, and how well they are performing. Further, evaluation involves the collection and systematic analysis of certain indices in the educational system and the labour market, in order to spot tensions or unforeseen developments, such as specific shortages of high-level manpower and skilled labour or the emergence of unemployment in certain sectors. This mode of evaluation makes it possible to check the extent to which the plan is being implemented, and to take corrective measures in order either to reach the targets fixed or to revise them in the light of experience.

In India, evaluation is one of the tasks carried out by the Planning Commission, which has a specialized unit for the purpose. The unit has the independence it needs in order to make a critical assessment of the difficulties encountered in implementing the plan; in addition, its reports are published and viewed as a form of democratic supervision of the plan.

In the course of the symposium, it was pointed out that for evaluation purposes the objectives of a human-resource development plan must be stated in a sufficiently precise and quantifiable way to permit the results of the actions taken to be fairly appraised. This has not always been the case in educational plans. Their general objectives are often designed only to stress the importance which the government attaches to education rather than to determine effective priorities reflecting actual choices and reforms.

If the evaluation of results is to be a permanent feature of implementation, enabling changes to be made in the course of fulfilling a plan, then, as one

participant insisted, planning must introduce the new dimension of innovation into administrative practice. Looked at from a different angle, planning itself is an instrument of modern management of large-scale enterprises and as such is for most countries an administrative innovation. But for virtually all educational systems there must be a variety of other administrative innovations before planning can be really effective.

On a much broader scale, however, applying to virtually all aspects of existing educational systems and their practices, planning must aggressively encourage innovation and change, the symposium agreed.

For these purposes, existing educational systems – measured by available or foreseeable public resources – are too costly to accommodate all those who would profit by attending them. This is demonstrably so in many African countries, for example, which already devote a quarter or so of their budgets to education and can still only provide schooling for half or less of their school-age population. Under conditions where the cost per pupil greatly exceeds the average income of the peasant, a vast educational expansion programme can only be based on reform and innovation. But the problem is not only one of costs, it is equally one of altering educational structures and content to fit the highest needs of their societies. But finally, even if the necessary changes and innovations have been indicated and incorporated in a plan, they can only be tested and applied in the class-room; innovation in education and training depends much more on the individual teacher than on the plan.

In any event, there are practical limits to minimizing the costs of education, for by its very nature education is an expensive affair, and there is no escape from that hard fact. But there is also no escape, the participants in the symposium were convinced, from the necessity of instituting far-reaching innovations of every sort in order to bring educational systems up to date, to enhance their efficiency, and to improve the quality and relevance of what is learned. By the same token there is urgent need, especially where the traditional sector still remains the dominant part of the whole, to introduce new training schemes designed to turn out rural instructors, craftsmen, farmers, senior staff for co-operatives and, generally speaking, non-wage-earning workers. Some advances have recently been made along these lines, but they are still little known and the results are very rarely evaluated scientifically. The hope was voiced at the symposium that systematic studies would be carried out in this new experimental area so that positive lessons could be drawn for the use of others, from cases of success and failure alike.

In short, it was suggested that evaluation, research and innovation be regarded as essential and permanent aspects of educational and manpower planning. Moreover, perhaps a specialized unit should be entrusted with

relevant research, pilot experiments, innovation and the dissemination of results. Educational research might thus gain a status comparable to that already enjoyed by fundamental and applied scientific research in other fields.

The exchange of views at the symposium about the new problems common to educational and manpower planning that must be faced in the years to come did not provide full answers to all the topics discussed. But the symposium achieved its purpose by defining the problems more clearly and by laying out possible avenues to their solution. As such, it reflected the present state of knowledge, spotlighted the areas in which further research is urgently needed, and promised to stimulate new efforts of analysis in the important field of development planning.

I Overview of manpower problems

F. Harbison **A systems analysis approach to human-resource
development planning**

Colloquy

A systems analysis approach to human-resource development planning

The 'manpower' approach to education planning has long been a subject for heated debate among educators and economic-development planners. Actually, manpower analysis is a new and evolving art which employs diverse media and methods of expression, and thus its conceptual framework is not yet frozen, and its methodology is neither orthodox nor rigid. There is still room for experimentation and for new creative ideas.

The major thesis of this paper is that the manpower approach should encompass much more than a tabulation of 'heads and hands' in precise occupational categories. It must go far beyond the construction of purely quantitative forecasts, projections, or targets for formal education. It should be related to a broad strategy of human-resource development rather than to a narrow concept of education planning. Finally, it is time to discard the notion that manpower needs are derived solely from requirements for economic development. No developing country is interested merely in the growth of its economy – in increasing its national product or income. All have broader aspirations for social and political modernization. Thus, manpower and education planning should be related to 'national development' – a term which encompasses economic, cultural, social, and political development in the building of national identity and integrity.

Without questioning the usefulness and importance of the kind of quantitative analysis which is characteristic of most manpower surveys, I suggest that it may now be appropriate to use in addition a systems analysis concept. It should be possible to look at the various constituent elements of human-resource development as a system which is somewhat analogous to a system for the generation and distribution of electric power. In using this frame of reference, one can identify skill-generating centres, such as, for example, schools, universities, training institutes, and employing organizations, which develop people on the job. The linkages between such centres are analogous to transmission lines. The manpower problems, such as skill shortages and labour surpluses, encountered by developing countries may be thought of as attributable to power failures in particular generating centres, ineffective linkages between these centres, or faulty design resulting in the failure of the

total system to carry the loads expected of it. A system of human-skill generation, like a system of electric power generation, should be designed to carry varying loads; it must have built-in flexibility to meet such loads; it must be adequate in size; and above all its components must be properly balanced. The systems-analysis approach makes it easier to identify in operational terms major problem areas, and it compels the analyst to examine the critical inter-relationships between various manpower, education, and economic-development programmes. It provides a logical starting-point for building a strategy of human-resource development.

Human-resource problems in developing economies

The major human-resource problems in developing societies are : (a) a rapidly growing population; (b) mounting unemployment in the modern sectors of the economy as well as widespread underemployment in traditional agriculture; (c) shortages of persons with the critical skills and knowledge required for effective national development; (d) inadequate or underdeveloped organizations and institutions for mobilizing human effort; and (e) lack of incentives for persons to engage in particular activities which are vitally important for national development. There are obviously other major human-resource development problems such as nutrition and health, but these lie for the most part in other technical fields and are thus beyond the scope of this paper.

Most manpower and educational planning experts agree on the fundamental importance of an analysis of population distribution and trends. It is particularly important to have some conception of the annual rate of population growth (and whether this rate is increasing or remaining constant), the age distribution of the population (with particular reference to those under 14 years of age), and the approximate size of the 'active population'. Some calculation of the probable size and composition of the labour force is also essential, although with rare exceptions reliable labour-force statistics are non-existent in most developing countries.¹ Here it is important to distinguish between the labour force in the modern or monetized sector of the economy and that in the traditional sector.

¹ An exception to this statement is Tanzania. An excellent sample labour-force survey was made in 1965 for the ministry of economic affairs and development planning by Robert S. Ray, a Ford Foundation consultant

In nearly all of the developing countries, one can assume that population is growing at rates in excess of 2 per cent per year, and in most it is climbing toward 3 per cent or more. This suggests that in most cases at least two-fifths of the population is likely to be less than 14 years of age and hence not considered to be in the labour force. It also means that a high proportion of the population is of school age – a matter of great consequence for educational planners.

The manpower analyst, of course, is particularly interested in the present and future size of the labour force, its growth rates in both the traditional and modern sectors, and the factors which determine labour-force participation of various groups. Of necessity he must also be concerned with the consequences of policies to limit population growth. For example, a reduction in birth-rates will not immediately lead to a reduction in the labour force, but at the same time it would probably increase a country's propensity to save and to invest in productive activities. Population control, therefore, in addition to its other obvious benefits, may contribute directly to greater labour productivity.¹ Certainly, the human-resource development strategist should give very close attention to population problems and assume greater responsibility for proposing population-control measures.

Mounting unemployment in urban areas is probably the most serious and intractable problem facing today's newly developing countries. Unemployment rates as high as 15 per cent of the labour force in the modern sectors are not uncommon, and even in rapidly industrializing countries they seem to be rising rather than falling. The reasons are fairly clear. Relatively high wages in the modern sectors act like a magnet drawing persons away from the rural, agricultural areas. Primary education raises the aspirations of rural youth to escape from traditional agriculture into the modern sector. Jobless immigrants to the cities can be fed and housed for considerable periods by relatives who already have employment. And behind all of these factors is a rapidly swelling labour force resulting from ever-increasing population growth.

As a rule of thumb, the rate of increase in the labour force in the modern sector will exceed the rate of increase in population growth. Thus, if a country's population is rising at $2\frac{1}{2}$ per cent annually, the increase in the labour force in the modern sector is likely to be $3\frac{1}{2}$ or even 4 per cent per year. On the other hand, the rate of increase in new employment opportunities is limited. At the very best, new jobs are created at a rate only half that of

¹ For further elaboration of this point, see Ansley J. Coale, 'Population and economic development', in American Assembly, *The population dilemma*, Englewood Cliffs, N. J., Prentice Hall, Inc., 1964, pp. 46–69

the increase in national income. Thus, if national income increases annually at a rate of 6 per cent, the highest probable increase in new jobs may be 3 per cent. Indeed, in most countries the rate of increase in new jobs is less than a third of the rate of increase in national income, and in some, national income has increased substantially without any expansion of employment in the modern sector.¹

Unfortunately, greater investment and the growth of new industries in the cities appear to aggravate rather than to alleviate the unemployment problem – the number of jobs increases, but the number of those seeking them increases even faster. The human-resource development planner is thus faced with a dilemma: Where shall the surplus labour force be stored? Within the factories, by compelling employers to hire more workers than they need? Within the government establishment, which is already overburdened with visitors of employed relations? Or in traditional agriculture from which those with any education at all seek escape? The irony of this dilemma is that urban unemployment in newly developing countries is a consequence of modernization – a by-product of progress in lowering death-rates, spreading education, investing in urban development, and building modern factories. Although he might wish that somehow or other the problem would 'go away', the human-resource development planner cannot escape responsibility for considering ways and means of absorbing surplus manpower and directing it into productive activities.

The evaluation of occupational needs and skill-generating capacity has been a traditional concern of manpower specialists. Here, unlike the situation with unemployment, it is possible to suggest viable solutions for rather clearly defined problems. Manpower requirements can be determined; appropriate programmes of formal education and on-the-job training can be devised; and progress toward achievement of goals can be measured. In setting targets for education and training programmes, the analyst is concerned with two related but distinct concepts – 'manpower requirements' and 'absorptive capacity'. 'Manpower requirements' may be defined as clearly evident needs for persons with particular education, training, and experience. The assumption here is that such persons are necessary, if not indispensable, for the achievement of a programme of national development. 'Absorptive capacity' is a looser term which refers to a country's capacity to

¹ See for example the preliminary study by Joseph McGovern and Norman Uphoff, *Estimating expansion of employment accompanying changes in national product*, Princeton, N. J., Industrial Relations Section, Princeton University, 1966 (mimeographed)

provide some kind of useful employment for persons with certain educational qualifications. In effect, 'manpower requirements' should express *minimum* or essential needs; 'absorptive capacity' should express the *maximum* number of persons who can be employed without encountering redundancy or serious under-utilization of skill. The skill-generating centres, therefore, should produce trained manpower within this range between the maximum and the minimum; otherwise the skill-generation system is distorted or unbalanced.

The 'demand' for education or training must be distinguished from the allowable range between manpower requirements and absorptive capacity. Demand stems from social and political pressures for various kinds of education as well as from the willingness of people to pay fees to acquire it. Thus, for example, the demand for university education may be very high because of the status, prestige, and pay enjoyed by graduates; but, in many countries, this results in the production of graduates who cannot be effectively absorbed in the economy.¹ When demand is clearly out of step with requirements or absorptive capacity, the country's educational system is clearly distorted or out of balance with the needs for national development. In using the systems analysis approach, a major task of the human-resource planner is to detect actual and potential distortion and to consider measures for achieving a proper balance.

Another type of distortion in many countries is the underdevelopment, if not outright neglect, of appropriate measures of training persons in employment. A great deal of money is wasted in formal pre-employment craft or technical training which could be provided more efficiently and cheaply by employing establishments. Also the efficiency of skill-generating systems could be greatly improved by closer linkages between schools and universities and the employing institutions. For some reason, education planners have been inclined to think that on-the-job development lies beyond their legitimate concern, and at the same time they appear to have ignored the task of building the necessary bridges between formal education and in-service training. The systems-analysis approach helps to highlight this underdeveloped area of concern.

In the past, manpower analysis has centred on measurement of needs for various categories of high-level manpower, and in doing so it has usually overlooked the vital problem of organization and institution building. Suc-

¹ In India, for example, it has been estimated that the number of unemployed educated persons in 1975-76 will about equal the total stock of educated persons in 1960-61. See Institute of Applied Manpower Research, *Working paper no. 11*, New Delhi, 1965, Part IV, p. ii

Successful development requires the building of effective government organizations, private enterprises, agricultural extension forces, research institutions, producer and consumer co-operatives, education systems, and a host of other institutions which mobilize and direct human energy into useful channels. Organization is a factor of production, separate from labour, high-level manpower, capital, or natural resources. The essence of organization is the co-ordinated effort of many persons toward common objectives. At the same time, the structure of organization is a hierarchy of superiors and subordinates in which the higher levels exercise authority over the lower levels.

The successful leaders of organizations, or more accurately the 'organization builders', are in any society a small but aggressive minority committed to progress and change. They feed the aspirations, give expression to the goals, and shape the destinies of peoples. They play the principal roles on the stage of history, and they organize the march of the masses.

A major problem in many developing countries is 'organizational power failures'. Often government ministries, commercial and industrial organizations, or educational institutions simply fail to 'deliver the goods'. Usually, the trouble may be traced to a dearth of 'prime movers of innovation'.

Who then are these prime movers of innovation? Certainly the entrepreneur who perceives and exploits new business ventures belongs to this group, as does the manager or top administrator in public establishments. He may not always have new ideas of his own, but his function is to organize and stimulate the efforts of others. He structures organizations, and either infuses hierarchies with energy and vision or fetters them with chains of conformity. But effective organizations also need other creative people. The agronomist who discovers better measures of cultivation, and the agricultural assistants who teach the farmers to use them, belong to the innovator class, as do public-health officers, nurses, and medical assistants. Engineers are in essence designers of change, and engineering technicians and supervisors put the changes to work. And last but not least, professors, teachers, and administrators of educational institutions in many countries may constitute the largest group of prime movers of innovation, as they are the 'seed-corn' from which new generations of manpower will grow.

Some innovators are 'change-designers' who make new discoveries, suggest new methods of organization, and plan broad new strategies. Others are 'change-pushers' who are able to persuade, coach and inspire people to put new ideas to work. Some innovators, of course, are at the same time change-designers and change-pushers. But whether they are designers, pushers, or a combination of the two, the prime movers of innovation must have extensive knowledge and experience. Thus, for the most part, they are drawn from the ranks of high-level manpower. But they need more than proven intelligence and thorough technical training. They should have in addition keen curiosity,

a capacity for self-discipline, and an unquenchable desire for accomplishment. They should be adept at asking questions. They should have the knack of stimulating others to produce ideas and to activate the ablest minds about them; and they should be able to sell ideas to superiors, subordinates, and associates. The prime mover of innovation must be convinced that change can occur as a result of individual action, and he must have the drive within him to bring it about. This may stem from a desire to rise in social status, to build up material wealth, to acquire political influence, or to preserve an already established prestige position.

Many of the persons holding commanding positions in organizations are conformists or even obstructors of innovation. They must be systematically replaced by more creative innovators. The human-resource development planner should be able to locate the critical points of power loss in organizational structures and to suggest remedial measures.

A final problem area in human-resource development is incentives. It is one thing to estimate the needs for manpower of various qualifications but quite another to induce persons to prepare for and engage in occupations which are most vital for national growth. In most developing countries, it is incorrect to assume that relative earnings and status reflect the value of the contribution of individuals to development. Pay and status are often more related to tradition, colonial heritage, and political pressures than to productivity. Characteristically, for example, the rewards of subprofessional personnel and technicians are far from sufficient to attract the numbers needed – the pay of teachers is often inadequate; the differentials in compensation between the agricultural officer and agricultural assistant are too great; and the earnings of scientists and engineers, in comparison with administrative bureaucrats in government ministries, are too low. The preferences for urban living, the forces of tradition, and historical differentials all tend to distort the market for critical skills. It follows then that the demand for certain kinds of education, particularly at the university level, is inflated relative to the country's absorptive capacity. The human-resource development planner must therefore consider deliberate measures to influence the allocation of manpower into high-priority activities and occupations. Such measures may include major changes in the wage and salary structure, scholarship support for particular kinds of education and training, removal of barriers against upward mobility, and in some cases outright compulsion. As many developing countries have learned to their chagrin, investments in education can be wasted unless men and women have the will to prepare for and engage in those activities which are most critically needed for national development. There then are the problems and tasks which face the human-resource development planner – the consequences of population increases and the measures for controlling them; underemployment and unemployment in both the tradi-

tional and modern sectors; skill shortages and the processes of developing high-level manpower to overcome them; organizational weakness and the need to find prime movers of innovation for institutional development; and provision of both financial and non-financial incentives in order to direct critically needed manpower into productive channels. Some of these are subject to quantitative analysis; others are purely qualitative; and a few are subject only to intuitive judgement. But, they are all interrelated. The systems approach forces the analyst to examine them simultaneously as he searches for the weak spots – the points of power failure or the major areas of distortion – in a country's over-all effort to effectively develop and utilize its human resources.

This approach in reality is not new; it is little more than a logical framework for looking at problems which are almost blindingly obvious to those concerned with development problems. In order to illustrate this approach more concretely, let us sketch very briefly in broad strokes the critical elements in the utilization and development of human resources in modern Nigeria.

*Development and utilization of human resources in Nigeria*¹

For a number of reasons, it is appropriate at this time to analyse Nigeria's system of development and utilization of human resources. The new government, which took over in January 1966, is currently reviewing all aspects of human-resource development in the country with the objective of formulating a national policy on education. It is now possible to review progress in manpower and educational development in the initial three years of the first six-year plan (1962–68) and to estimate expected achievements by the end of the plan period. Finally, at the request of the new government, the country's principal economists and planners are already considering the guidelines for the second development plan (presumably running from 1968 to 1974), and there is every reason to believe that they will want to give serious attention to manpower and education problems.

¹ [In presenting his paper Professor Harbison emphasized that he had chosen Nigeria to analyse because it illustrated so well the problems typical of many other developing countries, and because he had worked closely with Nigerian officials on these problems for some years. The conclusions reached and the solutions advocated are, of course, his personal views. – Ed.]

Basic problems

The 'number one' manpower problem throughout Nigeria is rising unemployment, particularly in the urban areas of the southern regions. Despite the fairly high rate of economic growth achieved in 1965 (estimated at 5 per cent of GNP), unemployment is rising, and its incidence is particularly high among school leavers who are unable to qualify for the limited available places in secondary schools. Even in the North, unemployment is becoming noticeable in the major urban areas. New factories and new commercial enterprises are providing jobs for only a small fraction of the new entrants into the labour force, and they are not likely to absorb appreciably larger numbers of workers in the future.

A second problem is a shortage of critical skills. In the senior ranks, the categories in shortest supply are engineers, scientists, doctors, veterinarians, and agronomists. At the intermediate level, there are even more severe shortages of nearly all technical, subprofessional, and certified teaching personnel. There is also the usual shortage of senior craftsmen and technical foremen as well as higher-level secretarial and clerical personnel. Although the existing statistics published by the National Manpower Board are admittedly rough estimates, they do provide reasonable orders of magnitude which indicate that the country needs at least three persons in the subprofessional, technician, and teacher categories for every university graduate. But at best the output of qualified personnel at this level is less than half that required to meet the identified needs.

The total number of university graduates being produced is, if anything, ahead of target. Indeed, some graduates in the arts, humanities, social sciences and law are already beginning to have difficulty finding 'appropriate' jobs. Increasingly they must accept starting positions in the lower 'executive' rather than the 'administrative' level of government service. In the near future, the production of non-technical university graduates may exceed the economy's capacity to absorb them productively, at least in the kinds of jobs highest on their preference list. But there is, of course, a real shortage of scientific and technical graduates which is likely to continue for a long time.

Institutional and organizational inadequacy is another major problem. With the expansion in numbers of students, it is generally agreed that the quality of secondary education has declined. New industries tend to operate at low levels of efficiency. Government ministries, in some cases, have fallen behind in preparation of project proposals for external assistance. There is weakness at all levels in gathering of statistical data necessary for forward planning. These difficulties, of course, are characteristic of all newly developing countries. They may be traced in part to persistent shortages of qual-

ified teachers, the dearth of subprofessional technical personnel in industry and agriculture, and the limited qualifications of much of the personnel in the civil services. Because of comparatively low pay scales and limited opportunity for advancement, not enough people are willing to train for and seek employment in the intermediate occupational categories. Finally, there are too few energetic innovators, in the higher echelons of both private and government institutions, interested more in promoting change than in tenure of office.

As suggested earlier, the major manpower problems in Nigeria are almost blindingly obvious. They are quite similar to those of other developing African nations. To be sure, their quantitative dimensions have not been defined precisely. More detailed and systematic studies are being planned, and in particular a sample labour-force survey will throw new light on the magnitude and incidence of unemployment. It is probable, however, that more reliable statistical information and more systematic surveys will simply confirm the gravity of the problems which have already been identified. In any case, the search for solutions should not wait upon additional statistical and factual information. The planner should proceed at once to examine the system of human-resource development and utilization and to identify its basic structural weaknesses and major sources of power failure.

The development of formal education

Education is Nigeria's biggest and most expensive industry. It accounts for about a fourth of all recurrent expenditures by governments. Its total employment is greater than that of all industry and commerce combined, and it uses the services of a least a third of the country's high-level manpower. Its function is to satisfy the aspirations of Nigerians for a better way of life, to produce needed skills, and to develop and extend knowledge for national building. An activity of this kind, which consumes so large a share of the nation's resources, should be operated efficiently and economically. But, in important respects, the criteria of efficiency and economy have still to be rigorously applied, and this is no easy task. A common criticism of the education industry in Nigeria (as in many other countries) is that it is top heavy, structurally imbalanced, inadequately geared to the needs of the economy, and at points unnecessarily costly. The spectacular development of Nigeria's universities is both a source of strength and a cause of distortion in the system of human-resource development. The standards and quality of university-level education are admirably high. But total costs per student, which exceed those in Great Britain and even the United States, are by any measure strikingly high. For example,

the average annual recurrent cost per student is nearly \$3,000, and the average faculty-to-student ratio in Nigerian universities is one to six. If the faculty-student ratio were increased to one to twelve (a figure approximately that in the better institutions in advanced countries), the number of students could be doubled without any increase in staff. But Nigeria has five universities with a total expected enrolment by 1968 of about 10,000 students. There are duplicating and competing faculties. A huge amount of money is spent on boarding facilities and staff housing; and class-room and laboratory facilities are under-utilized. Each institution is too small to take full advantage of economies of scale. But already this costly university system seems on the verge of turning out more non-technical graduates than the country urgently needs, whereas it is not producing enough scientists, engineers, and doctors, primarily because the secondary schools are unable to provide enough students with adequate mathematical and science backgrounds.

This relatively heavy emphasis on university education tends to distort the development of secondary and even primary education. To a high degree Nigeria still has a 'single axis' system of education. The underlying objective of the curriculum and teaching in secondary schools is preparation for the universities. The school programme is oriented toward the small minority of students who will be 'successful' in gaining access to the universities, and it puts little emphasis on useful terminal education for the majority of 'unsuccessful' students who will not get to the university. To be sure there are many teacher-training institutions at the secondary level, but very few technical and vocational schools.

A major bolstering force of the single-axis system in secondary education is the sixth form. To the extent that it is a prerequisite for university entry, the sixth form tends to mould the curriculum, teaching, values, and goals of secondary education in the single-axis tradition. Indeed the proponents of the sixth form argue that it is necessary to raise the levels and improve the quality of secondary education - i.e., to gear secondary education even more closely to university preparation. Fortunately, however, the role of the sixth form is now being seriously questioned. The universities are finding that their selection is better if they admit qualified fourth-form leavers to a 'concessional' year of preparation for university-level work. In effect, the one-year concessional study at the university is a substitute for two years' work in a secondary sixth form, and the quality of teaching, particularly in the sciences and mathematics, may well be better.¹

Actually, most education specialists in Nigeria are now aware of the distorting role of the sixth form and agree that major changes are required. Some would eliminate it entirely in favour of the concessional preparatory year in

¹ [See Guy Hunter's contrary view of the sixth form, page 91]

universities, advanced teacher-training colleges, or higher technical institutes. Others would retain it but broaden its role to provide a terminal education in addition to university preparation. This would be tantamount to turning the sixth forms into 'junior colleges' which would be equipped to produce technicians and other subprofessional personnel as well as candidates for university-level work. In either case, the major objective is to create a multi-axis system of secondary and higher education.

Most Nigerians are also aware of the need for broadening the secondary-school curriculum at the lower levels as well. The idea of the so-called 'comprehensive high school' is taking hold in both the Eastern and Western regions. Education planners throughout the country are now fairly strong advocates of 'multi-lateralization' of the curriculum by introducing some pre-vocational scientific and manual training in all secondary schools. Indeed, a high official in the Western region has already predicted that within five years all secondary schools will be of the comprehensive or multilateral type.

The human-resource development planner, therefore, can readily identify the structural defects of the single-axis programme of secondary education, and he can also note with assurance that most of the country's education experts hope to remedy the situation. But the costs of these reforms, in terms of equipment, teacher training and upgrading teacher salaries, are likely to be very high. Here research is urgently needed.

The structural defects in the design of secondary education and the relative overemphasis on university development explain in part the underdevelopment of subprofessional and technical personnel in the so-called intermediate-high-level manpower categories. University graduates in Nigeria have enjoyed very high status and pay, and thus secondary-school leavers who are qualified for higher education will press for entry into the universities rather than the intermediate technical or teacher-training institutions. Under these conditions, the expansion of post-secondary training facilities for technicians, agricultural assistants, medical technicians, nurses, and certified teachers is likely to be frustrated. The intermediate institutions simply do not have sufficient drawing power for students in competition with the universities. And indeed, the students they do attract are likely to contrive in one way or another to gain access later to the universities. For this reason, there is strong pressure for intermediate institutions to transform themselves into universities. Manpower statistics which dramatically demonstrate the acute shortages of subprofessional and technical personnel are not likely to change this situation. How then can the lack of generating capacity at this level be corrected? One solution may be to allow the universities to over-produce graduates, thus forcing those who cannot get senior posts in industry or government to accept employment as technicians and teachers. In time, this will lower the

expected earnings of university graduates and make university-level education relatively less attractive. But this method, obviously, is both costly and wasteful. Another more direct solution would be to narrow the differentials in starting pay between university graduates and subprofessional personnel. Actually, the pay and status of graduates, particularly in the government service, is based more upon a colonial tradition than upon productivity or strategic usefulness in the economy. For example, there is no economic reason why university graduates who hold lower-level administrative positions in a government bureau should be paid more than technicians, trained school teachers, or agricultural-extension workers whose services are urgently needed and highly productive. There are, of course, formidable political and administrative road-blocks in the way of this solution. Another solution might be to assign to the universities the task of training at the subprofessional level. This would mean that universities would accept fourth-form leavers (at school-certificate Ordinary level) both for a 'concessional' year of preparation for university-level work and for shorter terminal subprofessional courses. In this case, the universities could control placement in accordance with aptitude and ability. The great advantage here would be the possibility of lowering the high per-student costs in the universities by increasing student enrolment and thus capturing economies of scale. Almost certainly, this solution would be less costly than building new and separate institutions for post-secondary intermediate education and training.

The human-resource development planner cannot expect to come up with a clear and logical solution for this dilemma. In practice, all three of the solutions suggested above are likely to be tried in part and in combination. The power deficiency may be remedied somehow by a mixture of 'muddling through' and concerted corrective measures. And indeed, part of the deficiency may be overcome by more effective integration of formal education with training programmes for employed manpower.

The generation of skills of employed manpower

In Nigeria, there are sizeable power losses in human-resource development which result from ineffective 'bridging' between the system of formal education and the country's employing institutions. Both pre-employment education and continuous in-service training are essential elements in any system of human-resource development, and the two need to be effectively articulated.

As in other African countries, there appears to be a general shortage of craftsmen and well-trained artisans. Most persons in this category learn their trade on the job. Some have received training in the large expatriate enter-

prises such as the United Africa Company and the Shell-BP petroleum enterprises. A much larger number emerge from the indigenous apprenticeship system,¹ and others gain experience by working on construction jobs. Only a handful are the products of pre-employment trade centres and vocational schools.

It is widely assumed in Nigeria that craft training in formal vocational schools should be expanded. Yet, training of this kind is extremely expensive; qualified teachers are hard to find; and the effective demand by employers for the 'graduates' is uncertain. Unfortunately, there has never been a basic study of the structure of demand for craftsmen and the effectiveness of the various processes which produce them, but there is now growing interest in a new systematic approach to the problem – the 'Skapski programme', so called because of the imaginative, dynamic, and persistent efforts of its originator.

In essence, the Skapski programme has a four-prong strategy. It calls first for several pre-vocational courses as part of the curriculum of all secondary schools in order to make all students more 'trainable' on the job or in more advanced technical-training programmes. The second prong is the development of a small number of high-level trade schools to produce senior craftsmen. Completion of pre-vocational training coupled with several years of general education would be required for admission to these schools, which in many cases would become divisions of 'comprehensive high schools'. The third prong would be massive technical assistance for improving the day-to-day operation of indigenous apprenticeship and training activities of small employers. And the final prong would be maximum utilization of the facilities of the large, expatriate firms to train a wide variety of skilled workers. If adopted, the Skapski programme would remedy the most serious deficiencies in the existing system of craft skill development, and it would head off the proliferation of costly trade centres and lower-level vocational schools which have proved to be very ineffective and wasteful in most developing countries.

At the higher manpower levels, there are serious deficiencies in the 'bridging' between the universities and the employing institutions. For example, applied research and extension in fields such as agriculture are carried on in government institutions which are separate from the universities, and too often there is little communication between the two. Greater integration of the teaching,

¹ For a report on a survey of the indigenous apprenticeship system of the Western region of Nigeria see Archibald Callaway, 'Nigeria's indigenous education: the apprenticeship system', *Journal of African studies*, University of Ife, Vol. 1, No. 1, July 1964

research and service activities could result in better utilization of scarce personnel, better training of university students, and far more productive research. Although progress is being made in this area, the universities still tend to be too remote from the main stream of development activities. To a lesser extent, a similar situation prevails in public administration and management staff training for employed manpower.

Most manpower analysts would agree that the Nigerian universities are operating well below their potential capacity for generating the kinds of skills required in Nigeria. They need to expand greatly their extension, extramural, research, and service activities. They should devote more resources to upgrading the skills and knowledge of the high-level manpower at present employed in both the public and the private sector. And they should extend their spheres of influence downward and outward by assuming more of the burden of education of subprofessional technical and teaching personnel. Through better 'bridging' of this kind, the social returns on the high investments in university education could be increased significantly.

The unemployment dilemma

Up to this point, we have concentrated on measures to improve the skill-generating capacity of the system of human-resource development. For the most part, we find here that there are logical and feasible solutions for rather clearly defined problems. But much more formidable obstacles are encountered in dealing with the utilization of manpower. As previously stressed, rising unemployment and persistent underemployment are Nigeria's most intractable and serious manpower problems. And although planners and government leaders are much concerned, they are at a loss to find appropriate solutions. As yet, there have been no comprehensive studies of unemployment in Nigeria but there are widely held beliefs about its composition, causes, and consequences. In the urban areas, the growing army of unemployed is thought to consist mostly of primary-school leavers. They migrate to the cities in search of jobs or further education and training which will enable them to find employment. Presumably they live with relatives or friends who are willing to 'take them in'. Because wages are comparatively high, those who find jobs are reasonably well off, and their success encourages droves of less fortunate persons to remain in the cities with the hope ultimately of finding employment or educational opportunities. The urban unemployed also include older, unskilled persons as well as youngsters whose families have been city-dwellers for some time. Job opportunities are limited because the rate of expansion in government employment has been curtailed for plausible reasons of economy and because the new factories using modern equipment

absorb relatively little labour. There remain petty trade, handicrafts, and service, all of which are virtually choked with underemployed labour. In these activities, there is probably at least as high a proportion of disguised unemployment as in the rural areas.

The creation of more jobs in the urban areas will not solve the problem of unemployment, because it simply induces a more than offsetting increase in the urban labour force. Let us examine some measures which, though often advocated (and occasionally even tried, in some countries), seem clearly destined to fail. The first is to require factories to employ more workers than needed and to restrict their right to reduce working forces as productivity expands. Holding the labour reserve within the factory gates in this way accomplishes nothing. It reduces productivity and at the same time generates a swollen labour force. Alternatively, some economists have advocated reducing wages in the major government services, factories and commercial enterprises. This, they argue, would have the dual effect of lowering labour costs, thereby reducing the pressure to substitute machinery for men, and dampening somewhat the attractiveness of urban life to potential in-migrants. This solution, however, must be rejected on practical political grounds. Civil servants and well-paid factory workers, for example – in a position, sometimes with the aid of trade unions, to wield great political power – simply would not tolerate it.

Another device, suggested in an ILO report, would be for governments themselves to employ, and through taxes and subsidies induce private enterprise to hire, 'more labour than it would be worth while to employ on the basis of a comparison between productivity and wages'.¹ This might be appropriate, according to its advocates, as long as the newly employed workers have a net productivity above zero so that their employment adds to total current output. But, in essence, this would simply be substitution of work relief for direct relief. It would do nothing to ease the pressures for expansion of the labour force. Indeed, a modified version of this tactic was tried in Kenya in 1964. Here a major effort was made to wipe out unemployment under a 'tripartite agreement' whereby the government, private employers and the trade unions agreed that all major employing institutions would increase their employment by 15 per cent. In this case, the unions also agreed to forgo their demand for general wage increases. The effort was a failure. The private employers did take on additional workers, and this acted like a magnet attracting new workers into the urban labour markets. The government, which faced financial stringencies, simply could not afford to pay for additional workers and

¹ International Labour Office, Studies and Reports, New Series No. 67, *Employment and economic growth*, Geneva, 1964, pp. 133-41

thus failed to carry out its part of the agreement. In a few months the working forces in most of the private establishments had dropped to their former levels through attrition not offset by new appointments. In the end, the volume of unemployment, as a consequence of the expansion of the labour force in response to the prospect of more jobs, was increased. And with the collapse of the whole arrangement, the unions naturally resumed pressure for wage increases.

Finally, attempts to make it easier for surplus labour to remain in the cities are also doomed to failure. For example, government unemployment insurance may simply create a larger army of unemployed than could exist under the private unemployment security system of support by relatives and friends. Investment in better housing for labour makes it possible for more immigrants to swell the ranks of the urban unemployed. The same may be true even of measures to improve health and sanitation, although these, of course, could be justified on other social grounds.

Arthur Lewis comes much closer to hard realities when he argues that the best remedy would be to prevent wages in the modern sector from moving out of line with incomes in the traditional sector. In general, he says, wages in the modern sector should be kept at about 50 per cent above the agriculturist's income, and excess profits of enterprises should go not to the workers but as a rent element to the state. In this way, governments could promote capital formation and finance public services. They could reduce differentials in earnings of labour by investing these funds primarily in agriculture and rural development.¹ Lewis admits that this policy would be anathema to trade unions and some governments, and concludes that in the end political forces will determine the outcome.

But Lewis, although on the right track, overstates the wage argument and makes his solution politically more difficult by so doing. Essentially, the key to the solution of the unemployment problem is in an increase of earnings in the agricultural sector and the making of rural existence more attractive, particularly for school leavers. The idea of holding wages down in the modern sector is not as palatable politically as increasing investment in the rural sector. In other words, unemployment in the modern sector may best be alleviated by a rural transformation which keeps the labour surplus on the land and provides some productive employment for it at the same time. Indeed,

¹ W. Arthur Lewis, and American Economic Association (Papers and Proceedings), Proceedings of the Third Biennial Mid-West Research Conference on Underdeveloped Areas, *Unemployment in developing countries*, October 1964. W. Arthur Lewis, the Richard T. Ely Lecture : *A review of economic development*, May 1965, p. 12

in most newly developing countries, this is the road to effective industrialization as well.

In many modernizing societies, agriculture is the most underdeveloped sector of the economy. It is characterized by poor use of land, primitive technology, and difficult access to markets. Yields per acre are low, and incomes in real terms are barely at a subsistence level. As a consequence, most of the newly developing countries, where the bulk of the population still lives in rural areas, must import food. Thus, the development of agriculture, livestock, fishing and related activities can be justified as a measure to save precious foreign exchange, and the raising of rural incomes is the best way to provide markets for industrial products. Rural development, therefore, can and must contribute to national production and development. And of all forms of development, rural development is the most labour-intensive and has the greatest capacity for absorption of relatively unskilled labour.

The requirements for a comprehensive programme of rural modernization are not modest. New kinds of organizations and institutions are needed, and these require large inputs of high-level manpower. Some decentralization of political and economic decision-making is necessary. And in most cases the effort will require the diversion of financial resources generated in the modern sectors for development of the agricultural sector. In Nigeria all three of these basic requirements run counter to past development policy.

For rural modernization the following organizations and institutions are essential: agricultural-research institutions for food as well as export crops; extension services in all major agricultural areas; marketing co-operatives; rural development banks; organizations to develop and manage land reclamation and irrigation systems; community-development organizations; primary, secondary and technical schools; institutions for adult education; health clinics with services for outlying areas; and strengthened local government in rural villages. These all require quite large numbers of subprofessional personnel, such as agricultural and veterinary assistants, medical technicians, extension workers willing to live close to the farmers, teachers, village community-development workers, rural credit and marketing co-operative managers, and so forth.

In Nigeria, however, these occupations command low status and pay compared with higher-level occupations in government, industry and commerce in the large cities. Education in the rural areas has an urban and academic bias rather than an orientation to rural life. Thus, the effect of expansion of education is to drain the best brains from these areas, making it difficult to find and hold the kinds of people needed to staff rural organizations and institutions. The solution here may be to raise the salaries and increase the perquisites of subprofessional manpower needed to spearhead rural development. One could argue that the incomes of skilled workers in rural areas

should be at least equal to if not higher than the starting salaries of university graduates in government service in the capital cities, and there should be ladders of promotion leading to positions of high pay and status in the rural areas. Typically, however, nearly all high-paying positions are in the capital cities, which destroys the incentives for creative people to make a life-work of living in the bush. Without a major adjustment in the wage and salary structure of high-level manpower in favour of rural occupations, however, the building of the necessary organizations and institutions for rural modernization will be extremely difficult if not impossible.

A final requirement is adequate investment in rural development. To some extent the necessary resources can come from the rural areas themselves. Experience has shown that rural inhabitants are willing to devote resources, either in labour or in taxes, for projects from which they derive clear benefits. Thus in many countries local villagers will co-operate under proper leadership to construct schools, dig wells, and build local access roads. They will improve land and cultivate it more intensively if they are assured the major share of increased output. Indeed, as Wolfgang Stolper has argued on several occasions, people are willing to tax themselves for what they think are wise expenditures. Thus, the amount of taxes, in the form of produce, money, or labour, which can and should be raised depends upon the efficiency of their utilization. Rural areas in most developing countries can support a substantial amount of development, provided that they are not taxed to finance urban development as well.

In many countries, however, urban development and industrialization are financed by taxes of one kind or another on rural production. In Nigeria, for example, a substantial proportion of the income for development of the modern sectors comes from the agricultural marketing boards which purchase products such as palm oil, cocoa, and ground-nuts and sell them at a profit in foreign markets. The accumulation of funds for development rather than is justifiable, provided that they are used for rural development rather than simply for construction of government buildings, luxury apartments, public services, and other such projects in the modern sectors. Certainly, it is unrealistic to treat agriculture as a major source of revenue for investment in industrialization and urban development and at the same time expect more private investment of time and resources in agriculture. The rural areas cannot provide the surplus funds for investment if they are starved. On the contrary, as Lewis suggests, some of the profits generated in the industrial sector should be siphoned off for rural development. This can be achieved in many ways. Development funds can be diverted from city streets to rural access roads. Credits can be made available for agricultural development instead of for the building of city apartments. Funds can be allocated to agricultural-training institutions rather than to television stations for urban

entertainment. And priority can be given to improvement of housing and living conditions through rural community development rather than to urban construction and slum clearance. Such a policy will encounter strong political obstacles, since the urban groups are in many cases the most vocal and politically powerful elements in the society. Yet, rising urban unemployment and the repeated failure of the agricultural sector to meet the targets set in development plans may produce some changes in attitudes over time.

To summarize, the major goal of a strategy to alleviate unemployment lies in rural modernization. A rural transformation will absorb surplus labour more effectively than a modern industrial revolution. Both, however, can and should take place simultaneously. But human-resource development planners should not assume that rural modernization alone will eliminate unemployment or underemployment; it can only alleviate the problem and keep it from festering in the urban areas. Any country with a high rate of population increase is likely to encounter visible and hidden unemployment in all sectors of the economy unless it can achieve a rate of economic growth which unfortunately seems beyond the immediate capacity of most newly developing countries.

Conclusion

By using a systems analysis approach, the problems of development and utilization of human resources in Nigeria can be examined in logical perspective. They fall into two major categories: (a) those relating to skill and knowledge generation, and (b) those relating to unemployment and underemployment.

The first set of problems can be solved by making some changes in the design and performance of institutions providing various kinds of education and training, as well as by providing more effective bridges between them and the country's employing institutions. Our conclusion here is that Nigeria's system of human-resource development should be better balanced and more effectively geared to the country's occupational needs for national development. Nigeria is already devoting a very large proportion of its resources to education – some might argue perhaps too large a proportion and that the national interest would be served best by improving the efficiency of the existing system of skill and knowledge generation before allocating additional resources for its expansion.

The second set of problems, i.e., those related to utilization of surplus labour, are much more difficult to handle. Unemployment and underemployment cannot be eliminated by tinkering with educational institutions and training

programmes, or by the establishment of a youth corps. It can be alleviated by a major change in national development objectives which would give very high priority to a programme of rural transformation. Nigeria wants to increase national income and at the same time provide employment opportunities for its masses. But unfortunately, the two goals, in the short run, are not completely consistent. In order to satisfy employment objectives, it may be necessary to accept a somewhat slower growth in national income. The human-resource development planner is obliged to pose this dilemma, as well as to spotlight the stark reality that a substantial amount of unemployment and underemployment is an almost inevitable consequence of high rates of population growth.

The systems analysis approach used in this paper does not suggest that the more traditional manpower surveys are outmoded. On the contrary, it assumes that they must be made in order to arrive at a first approximation of manpower requirements. The systems approach, however, goes beyond traditional manpower requirements analysis by examining operational relationships within a broad range of factors involved in human-resource development. It forces the analyst to take a broad view of education planning and to examine its relationship to an even broader area of in-service development of skills and knowledge. It stresses the identification of causes of power failure and structural faults in design of skill-generating institutions. It is, in effect, an attempt to apply the principles of balanced growth to the field of human-resource development.

The use of this approach may lead us to question some of the concepts and slogans which often were employed in the past. Let me conclude by mentioning a few of them.

First, there is the notion that all developing countries should increase the proportion of their resources devoted to education. Actually, there is no clear-cut causal relationship between the volume of investment in education and successful national development. Indeed, under some circumstances, education of the wrong kind may actually impede growth. And poorly balanced educational systems can and do waste resources which could be used more productively for other purposes.

Second, there is the idea that human-resource development planning should be integrated with and subordinated to economic-development planning. To be sure, manpower requirements can be derived in some cases from sectoral growth plans. But manpower considerations – such as for example unemployment – may necessitate major changes in emphasis and orientation of the entire programme for economic development. It is, therefore, often just as logical in national planning to start with a broad plan or strategy of development and utilization of human resources as to begin with a plan to maximize

economic growth. In other words, one might argue that economic planning should be integrated with human-resource planning rather than vice versa. Finally, we ought to question the widely held belief that aid to the developing countries for human-resource development is always beneficial. For example, some kinds of external aid for development of secondary and university education can seriously distort skill-generating systems. More often, the ultimate cost consequences of pilot or demonstration projects financed by well-meaning donors are overlooked, thus committing the recipient countries to programmes which they cannot afford. And some programmes of student fellowships and exchanges may cause a harmful drain of precious brain-power from the less developed to the more advanced countries. The urgent need in the human-resources area is for comprehensive planning based upon an integrated examination of all major constituent elements. The systems analysis approach could make a significant contribution to meeting this need.

Colloquy



Harbison's paper introduced an over-arching set of ideas bearing on many topics touched on by other papers which were prepared in advance for the symposium. A common set of questions concerning the basic nature of the development process, however, was posed by all, and some were straight away put to the symposium participants by the Chairman, Philip H. Coombs. What changes had lately occurred in the manpower approach to educational planning? Was there a need to amend, scrap, or widen any former assumptions about it? If the answer was yes, what were the implications for educational planning, and its neighbour, economic development? Were there any aspects of the case, in inference, which warranted further research?

THOMAS Six or seven years ago, it was very popular to say – as I then did – that 'the emerging countries are compressing within a few years the development of centuries within the Western countries'. Many of us said this for one main reason. We knew the developmental pattern of western countries. If we applied it to the developing countries, we assumed it would spur their rapid growth.

My recent experiences have shattered this illusion. Instead of swift growth, I have learned, first of all, how slow economic development is. Secondly, I have learned that the modern sector in a typical developing country like Tanzania – where I am – is paper-thin. Only 3 to 5 per cent of the population work for wages. Only three-tenths of 1 per cent of the people are in occupations that need any substantial amount of formal education or training.

The same sombre picture presents itself when you view it from the standpoint of employment prospects. Last year, in Tanzania, we developed only 6,700 non-agricultural jobs, but we lost 24,000 jobs in plantation agriculture – and there was an acute shortage of economic development funds that could create jobs. A poverty-stricken country is just that. It is poverty-stricken. Tanzania – which I think is fairly typical – has an average *per capita* annual income of around \$60 or £20.

THOMAS
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When you live closely with such factors, a slightly different view about education sets in. In the early days, I shared the general feeling most people then had – and many still do – that education was like oxygen. It was good for man and beast and you couldn't get too much of it. Things look somewhat different to me now – at least in the sphere of high-cost post-primary education.

Many people don't agree with my present view. Just the same, I now feel that, in the face of severe resource shortages, the investments you make in post-primary education must be related as closely as possible to a country's actual requirements for the kinds of knowledge and training post-primary institutions provide. These institutions are tremendously expensive. In Tanzania, the *per capita* cost of training a university student is around £1,000 per year and around £400 for a high-school student – this in a country where the *per capita* income is £20 annually.

The post-primary claims for education compete with many other human claims – for health, food, and water to irrigate farms, for insecticides, fertilizers, roads, dams and so on. When these other needs are so urgent and when the resources for development are so scarce, can we justly ignore them in the name of preparing substantial numbers of high-school and university graduates for entry into the tiny modern sector in excess of its foreseeable requirements? What are these expensively trained graduates going to do when the modern sector is so small that it can't absorb them?

Hard choices are forced on you, whether you like them or not. There is no use saying: 'Since secondary and higher education is a good thing, let's push on with it endlessly.' The plain fact is that you can't pay for such endless expansion; and no one else is coming in with any large sums of money to do the paying on your behalf. Yes, you need secondary and higher education to help a country's development, but you need it in the context of what the graduates will do after they leave school. You need it in conjunction with your judgements about the kind of marginal developmental benefits you can obtain from this kind of tremendously expensive education.

At the same time, though, the priority you must give to the needs of secondary and higher education automatically imposes limits on how much you can spend on outlays for primary schooling. I agree with those who say that primary education is a fundamental conditioning process and that it is necessary in order to create a modern society. But there are two problems here. One is whether you can produce the number of primary teachers needed. The second is, that the kind of primary education we have been offering is not producing people who are willing to work at the

only kind of work there is – namely, farming. It is producing youngsters who aspire to the kind of work which simply cannot be found for most of them, while it seems to be alienating them from the farming work which can be found. It is doing this in the face of the other things I have mentioned – the over-all limits on funds for many urgent matters, the need for high-school and university graduates who can be effective factors in the development process, and the shortage of primary-school teachers.

The president of Tanzania has understood all this. He has understood and courageously stated that primary education, necessarily, will have to advance slowly with the help of such funds as can be diverted to it step by step from other developmental objects. For the time being, the policy is to hold constant the proportion of young people going to primary school. It is hard to say, however, how long this policy-line can be held. Great pressures are bearing down on it right now.

HARBISON

I fully agree with what Thomas has just said. The days have passed when we can confine our attention to high-level manpower. We still need projections and forward targeting of high-level manpower needs and supplies. The techniques themselves are quite simple. But the results cover so small an area of the problems we face that our whole look at manpower problems must, indeed, be broadened.

Besides what Thomas has mentioned – along with the factor of incentives dealt with in Jolly's paper [see Part IV, page 237] – I would add several other matters that have come to the front over the past five or six years and need to be grasped firmly. For one thing, it had previously escaped our notice that modernization itself – indeed, economic progress – is a generator of unemployment or of underemployment. Like all good things, it has its own particular diseases which must be cured. I am not saying that we should forgo modernization. I am simply saying, to repeat, that modernization generates problems of its own which need to be solved.

There is a second thing we have learned since 1959 or 1960 – though there will be people who will not agree with my conclusion. Where it was once believed that all investments in education were good – and that economic growth was a pure and simple consequence of investment in education – we know now that education can impede economic growth as well as accelerate it. The major question before us now is how to achieve a proper balance within an educational system. It is how to achieve the right types of education rather than simply greater quantities of education.

Third, we used to feel that manpower requirements and educa-

HARBISON
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tional targets were to be derived from economic-development plans. In that connexion, we talked about the need to integrate manpower and educational planning with general economic-development planning. Today, we can still agree that this need is real. But I would here suggest that manpower problems of newly developing societies have become so vast and important that we may have to reverse the earlier view of the case. We may have to adapt economic-development planning to the end of solving the problems of manpower which are being identified.

This applies especially to the newly developing countries where economic progress and modernization generate high levels of unemployment – and where the greater the increase in GNP, as in Venezuela, the greater may be the rate of accumulation of unemployment. If so, we may have to think of the manpower approach as lending a whole new dimension and a whole new set of objectives to general economic-development planning. What I am saying, to sum up, is this. Perhaps manpower planning is not a derivative of general economic-development planning but rather that general economic-development planning now may have to be thought of as a means of helping to solve some of the more critical manpower problems that occur during the process of modernization.

HUNTER

If you have posed a problem in human affairs so that it is impossible of solution, you must have posed it wrongly. What looks like an insoluble problem of employment is partly due to our not having understood the processes of economic growth in the types of societies with which we are dealing. We have abstracted economics and manpower from the seamless garment of society which is woven as a whole.

In historical terms, the simplest subsistence society begins to grow when there is a surplus from the primary sector of agriculture so that someone doesn't have to work for food. Instead, that person provides a service to others, and in so far as the agricultural sector produces a surplus, it employs his service. To put it another way around, a surplus in primary production gives employment and a market to those who can provide services.

But in the case of the young men in the African economies who are coming out of school in places such as Tanzania or Nigeria, where is the money coming from to buy their services? There are thousands of young men longing to be blacksmiths and tanners and weavers and mechanics, and the like. But the agricultural economy is so unproductive that it is not able to buy services from outside and so the available manpower is underemployed. Concurrently, there has been piled on top of a low production economy the superstructure of very expensive

governmental services which gets bigger and bigger with its analysts, statisticians, and economists, not to mention educational apparatus.

The acute shortage of income of which Thomas has spoken is due, basically, to the acute shortage of production from which income is derived. If we want to think about how people are to live a productive life, we have to pose our questions the right way. We have to ask: Who is producing and who can pay out of surplus for services at very simple levels, whether the surpluses come from basic agricultural production or from a primary industry like mining, as in a case like Zambia? How is the surplus generated here going to be used to give employment on a relatively simple scale for a great mass of people?

JOLLY Within the African setting, the economy of Zambia in many ways is a contrast to the economy of Tanzania. Our present *per capita* income is about £60. Our total wage-earning labour force, by African standards, is high – nearly 10 per cent of the total population. For a country of not quite four million people, we have nearly the same number in wage-earning employment as Nigeria, though Nigeria has well over ten times the population. Moreover, the current increase in the price of copper means that there has been a hefty increase in government revenues. This, in turn, means that the foreign-exchange prospects over the four-year development plan are good.

But, once you leave these points of contrast with other African nations – once you come down to manpower problems – many of the things said by Thomas are also true of Zambia. I would like to stress some of the problems with respect to which one's initial preconceptions about manpower planning are changed by direct experience.

First, manpower planning in Zambia is housing planning. We have the money to recruit people. When the country cannot get local people for its vast development plan, it is quite prepared to recruit expatriates. Yet recruitment has to be cut down, since there is at present insufficient housing. The housing problem, itself, is rooted in the physical bottle-necks affecting Zambia's capacity to construct houses.

There are obvious ways to deal with the housing shortage. But are they necessarily the best ways? Prefabricated housing, for example. Prefabricated housing, however, complicates our local employment problem, besides eating up foreign exchange we would sooner save for better uses.

A second way to deal with the housing problem is very clear from a drive around Lusaka. Although our *per capita* income is high by African standards, it is very low by the standards of the more developed countries, while the contrasts between the

JOLLY
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rural and urban areas in Zambia are fantastic. Yet the standard of expatriate housing in Zambia is far higher than generally found in England or in many areas of Boston or New York. But, because we are saddled with a high standard of housing which high-income earners have now come to expect, houses take that much longer to build and are that much more expensive.

There are other ways to solve the housing problem. You might put more people in the available houses, or change the rent structures so that expatriates would get used to housing standards they would expect in their own country. But will they? While you ponder the question, housing remains a social bottle-neck that is difficult to break and which holds back the development of the country. It stands as an example of how the manpower problems one encounters on the ground present a range of complexities far different from what they seemed to be when viewed from afar.

Direct experience also changes one's appraisal of the problem of wages and the capacity of the economy to absorb school leavers.

Zambia's gross domestic product (GDP) has been growing since 1957 or 1958 but employment, up till 1963, was falling. Over the last two years, in particular, our real GDP increased about 11 per cent in the first year, and around 20 per cent in the second, but only about 40,000 new jobs were created. Every expansion of the Zambian economy has added, with a little luck, a small margin of employment on to the total. But, while these marginal additions have been made, a continuing attrition has taken place over the whole field of present employment. From 1957 to 1963, the attritions exceeded the number of new jobs. Since 1963, the unprecedented expansion of the economy has enabled the number of new jobs to exceed the attritions. But the attrition continues. Why?

In Zambia, during 1964, the African wage bill rose by 26 per cent. Of this amount, 19.4 per cent represented an increase in average earnings, and the remainder was an increase in employment. If the proportions had been switched, employment would have risen much more rapidly. These increases in wages exerted pressure on the employer to shift to more mechanized methods of production. Since 1954, the price of imported machinery rose by just over one-third. During this same period, the index in the cost of expatriate labour rose by just about the same amount. Also during this period – but leaving out of account the remarkable increases that have taken place in the two years since 1964 – the price of unskilled labour rose to two-and-a-half times its level of 1954.

I am not suggesting that the rise in the wages of unskilled labour was unjustified in terms of social need. There were, right at the start, extreme inequities in the wage structure, drawn along racial lines. But, when the average employer faces a one-third increase in the price of machinery, a one-third increase in the price of skilled labour and an increase of one-and-a-half times in the price of unskilled labour, he reacts by shifting out of unskilled labour into machines or into skilled labour. To some extent the machines and the skilled labour go hand in hand.

We must come to grips with this problem, difficult as it is politically. We invite great dangers if we assume that there is some fixed relationship between the rate of growth of GDP on the one side and of employment on the other. I recognize that, even if the rate of increase of unskilled wages (or the price of labour generally) was slower than it had been in Zambia, there would still have been shifts to mechanization and a more rational use of labour. The evidence suggests, however, that the shifts would not have been so fast.

With respect to the attrition of aggregate employment I referred to earlier, the calculations of elasticity we have made in Zambia point in a particular direction. If the rate of growth of average earnings is 10 per cent, there may be – when the full effects have emerged – something like a 7 per cent decrease in employment. I do not want to overstress these figures. They are based on very vague data; but evidence from other places, like Puerto Rico, suggests the presence of an elasticity where there is an equal percentage fall in employment for every per cent increase in wages.

There is yet another change of perspective, growing out of experience in Zambia, which is of fundamental importance. It concerns the period of time involved in the different parts and pieces of manpower planning.

There are, it seems to me, three periods during which manpower decisions take effect.

The first is a short period of a year or eighteen months when virtually nothing can be done to increase the stock of formally educated people. You can, however, pick up increments of qualified manpower either through training courses lasting a month or two or through changes in recruitment policies.

Next, there is the period, extending up to five years, when the formal output of the school is limited by what is already in the pipeline. Yet significant changes in the manpower picture can be made by going outside the formal school system. This would entail short-run training courses of up to about a year, changes

JOLLY
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in policy affecting the allocation of existing manpower, or changes in overseas-recruitment policies.

Then there is the third period which extends up to fifteen or twenty years ahead. In this long interval, changes in the formal educational system will have some chance of producing results.

A great deal of the work on educational-manpower planning – at least as I understand it – has concentrated on this last field.

It has concentrated on the long-run forecasting of educational needs, on the balance between science and arts in the universities, and so on. Long-run forecasting obviously is important for the long-run manpower development of the country; but it must be remembered that proposals made about the *future* development of a country's manpower are likely to have big implications for the *present* educational budget. Yet it is precisely in the short-run and the medium-run policies, which can have the important and immediate effects on availability of manpower, that a gap exists in much that has been written about manpower planning.

While the allocation of housing was only one example of the immediate problems encountered in connexion with manpower planning, Thomas's paper [see Part IV, page 211] lists a whole range of others. They are the kind of problems with which a political leader ceaselessly has to grapple and which in many ways are more concrete than the long-run problems. In contrast, long-run projections involve enormous assumptions, are less immediate to the political leaders and, as I said a moment ago, have less impact on the *present* development plan.

Harbison spoke of the need to reconsider the relationship between the over-all development plan and manpower planning. In response to his remark, let me cite an example which underlines what I have been saying about the importance of medium-run planning – and how little we know about it.

I must first repeat again that, from a financial standpoint, the prospects for development in Zambia are at present very good – possibly the best in Africa. Nor is there any need to sell manpower planning. Everyone is crucially aware that manpower is the key bottle-neck to expansion, and the development plan squarely faces this bottle-neck. In a sense, the plan provided a superb test-case of what manpower planning can say about what is possible or not in the medium run. Every ministry submitting a development project stated the manpower needed to implement it. The manpower survey of the private sector asked the leading employers to state their present manpower stock and future needs, on the assumption that output in their industry increased in the next three years by certain specified rates.

So far, so good – in theory. But in the practice of the matter –

relying on manpower information available – can we speak with the precision necessary for practical decisions? Can we say that, if we recruit a thousand men in this field, or five hundred in that, the increase in production will be this and that? The honest answer is – no. Imprecise knowledge in this field makes it extremely difficult for manpower planners to set out the limits of economic development imposed by manpower constraints. Yet this medium-run period – where our knowledge is so weak – is one of the most critically important areas for the application of manpower planning.

HARBISON

I have several points to make here. First, as I implied in my paper, we should drop the phrase 'economic planning' and substitute for it the phrase 'national planning'. By enlarging the conceptual frame in this way, we could bring in the factors of political and social development as well as economic development.

Secondly, one of the misleading ideas we have to contend with in developmental work is the idea of gross national product. GNP, at best, is subject to guess-work. Yet it gives you a single goal – the rate of growth – and this in turn tends to overshadow other goals. It leads you to equate progress and success with this fictitious figure called GNP. In new countries in particular, progress cannot be equated with GNP. GNP really conceals the wide disparity between the modern and the traditional sector: as I have already said, there can be a tremendous increase in GNP, along with an exceptionally high unemployment rate.

Instead of making GNP a goal, we need to ask: Is a country capable of feeding itself, or are its people starving to death? Is it utilizing its human resources? Is it closing instead of widening the gap between the modern and traditional sectors? Is it improving the conditions of health? If we view all progress made in development economics solely through the lens of GNP, we give a distorted focus to the idea of progress.

I recognize that, once you depart from the concept of GNP, you get into great methodological difficulties and complicate your problems from a planning standpoint. Yet by clinging to it to the exclusion of other considerations, we resemble the case of the drunken man in New York's Central Park, who seemed to be looking for something when he was approached by a policeman. The policeman asked him what he was looking for. 'I lost my watch,' the man said. 'Where?' the policeman asked him. 'Oh,' said the man, 'I lost it two miles from Central Park – but the light is better here.'

KOLLONTAI

Our rethinking about manpower problems has been forced upon us by the attempt of the developing countries to achieve very quickly what the developed countries took a much longer time achieving. In the developed countries, development at the

KALLONTAI
cont.

first stage was concentrated on the economic aspects. Other aspects of development were conditioned on the economy being strong enough to shoulder them.

Can the developing countries jump over the stage-by-stage way in which western Europe moved from primitive to new industries? There is a school of thought that says these countries must repeat all the stages that their predecessors went through. There are others who think they can jump over all the stages. The truth seems to lie between these two extremes. But there remains the question of the *extent* to which these countries can jump over stages and the extent to which they cannot. Developing countries have a limited amount of resources to use and numerous problems to solve simultaneously.

I would like to note a contradiction between two such problems. The first is the need to increase productivity, since without it there is no chance to do anything else. The second is the need to increase employment possibilities. The two factors conflict at the point where you ask whether your increase in production is to be secured by 'capital intensive' means or by 'labour intensive' means. It is in this setting that the planners must make decisions on numerous problems, among them the problem of the amount and type of skills that are needed and will be needed toward the end of the plan period.

JOLLY

The practical problem is not so much the need to bring the plan objectives into the GDP, as Harbison has suggested. The objectives are all there. The problem is to classify them in meaningful ways so that the political leadership can choose among them, after judging the political importance of the various objectives and how they can be attained with limited resources. It is not enough to figure out long-range objectives. There must also be estimates of the costs and possibilities of achieving them in terms of the manpower and other restraints. If manpower, for example, is the real bottle-neck, at some point you are forced to say: 'You can't have this objective.'

MWINGIRA

In the remarks that have been made here, I feel that too much emphasis has been placed on the relationship between agriculture and economic development. In Tanzania right now, farmers are producing more than they can sell. Teachers will not teach agriculture to the students. They ask: is the land going to give them employment when they leave school? The plantation owner in the country is now mechanizing his farming operation. He is using more and more skilled people - and throwing more and more youth into the ranks of the unemployed. Crop production is going up, and fewer and fewer people are finding employment on land. Should we change our developmental concepts again?

THOMAS In our planning [in Tanzania] we conceptually take into account the social objectives Harbison calls for and accommodate them in our economic and manpower planning. We try to increase our health facilities. We try to improve our roads. We have our village settlement schemes. We try to make farmers into modern producers and our co-operatives into efficient mechanisms. We convert these social goals into manpower terms, and then we do our best to devise and implement strategies for producing these kinds of people.

CALLAWAY In developing economies – as, for example, in tropical Africa – wage-paid jobs are scarce relative to the demand for these jobs in the employment market, especially by young school leavers. The larger, more modern, economic units in these countries – that is, the government services, the larger commercial, transport, and industrial establishments, as well as large plantations – cannot be expected to increase their needs for wage-paid employees to any marked extent in the immediate years ahead. There is, therefore, urgent reason for examining more critically the opportunities for simultaneously raising output and providing rewarding jobs, both wage-paid and self-enterprise, in the smaller economic units. These smaller economic enterprises include not only peasant-size farm-holdings but also small-scale, indigenous industries.

Yet when confronted with the task of upgrading these existing smaller-scale enterprises, public policies run into trouble. Extension services designed to provide technical assistance, allied sometimes with credit provision, are simply not getting the desired results. Central among the causes of this dilemma is the lack of close observation, and of classification of observation, of the reasons why these smaller-scale entrepreneurs react the way they do to incentives provided through public policies. Obviously, these peasant farmers and small-scale entrepreneurs themselves cannot be wrong: they react the way they do because of the circumstances of the environment in which they work. Thus, either the policies are wrong, or there is something not right about the way these policies are put into effect. A much closer examination is required to obtain sufficient understanding of local cultures so that the behaviour of these producers can be rationally explained. And when these explanations are found, they should be used immediately to adjust the procedures of the extension services of governments. Only in this way can a series of practical measures be undertaken with a high chance of success in meeting the task of creating more rewarding and productive jobs for willing African youth.

CHAIRMAN We started this discussion with a general question about what has happened in recent years to the concepts of the man-

CHAIRMAN
cont.

power approach to educational planning. The things said so far hold many implications on the common frontier where manpower planning and educational policy meet. There are some who feel that, as long as the problem of unemployment remains unsolved, there must be a slow-down in the flow of students through the formal school system. They are answered by others who feel that you cannot blame unemployment on education. Here, however, let us turn directly to a discussion of Harbison's paper and to its statement about the emerging problems with which the developing countries are faced.

HUNTER

I want to comment first on the factor of population. It is worth emphasizing that in many of today's developed countries the main population outburst happened when there was already a considerable preparation for a technological take-off. The problem of absorbing agricultural labour in the industrial sector was thus made easier in two ways. First, the means for absorbing them was present. Second, since the population had been growing only slowly beforehand, there was no very large surplus of agricultural labour already unemployed.

The case today in the developing countries is that the start of industrialization brings into clear view the extensive pre-existing underemployment in the economy. In this sense, the policies of development have been too successful. They have increased and made highly attractive a very small number of employment opportunities, largely in industry and urban areas, and this has succeeded only too well in producing an excessive flood of labour.

Meanwhile, the political demand for education has passed the point where it can be stopped, and certainly no political leader that I know of is going to stick his neck out very far in trying to stop it. At some stage, therefore, we shall have to think of ways of gently diverting the demand for education into channels which are more useful. The *Harambee* schools in Kenya are a case in point. These are secondary schools voluntarily set up and paid for by parents. They are trying to get their children to standard 10 or standard 12, and in this they are labouring under an illusion - since they won't get jobs even if they do get to standard 10. None the less, if we gave these school children better equipment for getting some kind of occupation, these schools might prove very worth while. The demand for education is such that parents are prepared to pay hard cash for it. Let us give the boys and girls something that will be useful for them, instead of giving them an illusory sense of achievement when they have reached standard 10.

This leads me to comment about sources of initiative and initiators, which Harbison alludes to. I think we underestimate the

potential initiative which led to trading in West Africa. In the right circumstances, it can lead to small but very important new trading and even craft-manufacturing initiatives. We tend to think that initiators who are sent out must be trained people. What we really need is the kind of economic activity which gives openings for initiatives in very small-scale ventures – those which employ one, two, three, five or ten people, not those which set up a factory to employ two or three hundred people. The tendency to neglect the peasantry is dangerous. The peasantry are capable of a great deal of initiative if somebody can put them in the way of showing it.

Next there is the question of levels of reward. I don't want to say much about this because there's a session on differentials later on [see Part IV, page 237]. But I did notice a significant phrase in Harbison's paper, where he alludes to comparatively low pay scales and limited opportunity for advancement of the technician level. Compared with the graduate level, advancement opportunities for the technician are relatively low; but compared with the average income of the population, they are fantastically high. The diploma-holder is already being paid a differential of probably twenty to one compared with unskilled labour or self-employed people. By contrast, the differential in the United Kingdom between, say, a senior civil servant at £5,000 a year and an unskilled worker at £500 a year is a differential of ten to one between the top and the bottom. The phrase 'comparatively low', therefore, wants watching.

Harbison also raises a question about the sixth forms in single-axis schools. I am a habitual defender of them. I don't believe there is anything fundamentally at fault with the sixth forms. It is rather the things that are taught in them. I listened to a talk on the radio in England the other day about comprehensive schools in England where people are doing plumbing in the sixth form. This is a kind of sixth form which could be developed. That is to say, grammar schools could be made into comprehensive schools with a wider range of high-quality activity. I think the sixth form is still viable, and I was surprised to see that Harbison thought the quality of teaching in the concessionary pre-university year would be higher than in sixth forms. My own experience with university teachers is that, as far as the profession of teaching is concerned, they are easily at the bottom from the standpoint of techniques, intelligibility, relevance and various other things. The trained sixth-form teacher is an infinitely better teacher for a boy of 17 than the university lecturer – or at any rate than all English university lecturers that I have ever encountered.

Next, there is the appalling problem in the developing countries

HUNTER
cont.

of what to do about the universities. The word 'university' has got such a prestige that it attracts people too strongly. It causes all the second-level institutions – the technical and the agricultural colleges – to avoid spending more than one year, or at most two, if they can help it, as technical colleges or agricultural colleges. Instead, they start degree courses, aided and abetted by many universities in the United Kingdom, in the United States and in other places. I think that one of Harbison's suggestions – that the universities, themselves, should undertake second-level technical teaching – is probably something that should be considered very carefully. If we can't keep agricultural colleges as agricultural colleges, if they must become universities, then let them at least do what they would have done as agricultural colleges, but carry the prestige name of the university with them.

This brings me to Harbison's emphasis on agricultural development. Although we are due to talk about this matter at greater length on a later occasion in this symposium [see Part III, page 159], there are two or three things that might be worth raising now.

I think one of the popular economic views was – and perhaps still is – that you had a large semi-surplus labour force hidden in the rural areas which you could put into industry at zero social cost. The reasoning here was that the marginal productivity of the underemployed agricultural worker was zero, and hence, without social cost or a reduction in agricultural production, that kind of labour could be attracted into industry. Perhaps the chief difficulty with this line of reasoning is, first, that you can't build an industrial civilization on a stagnant agriculture which provides no market for industry's goods; second, fierce social and unemployment problems are now arising from policies which entail attempts to build industry while agriculture is left untouched.

There is another point which Harbison mentions. It is that donors and aiders have found it much easier to give aid either to major infra-structures – to large tarmac roads, power stations, etc. – or to industry, than to agriculture, because it is difficult to wrap up an agricultural-development project in a form that can easily be submitted to a donor. If it is a case of just putting money into more extension services or farmer training, lending agencies are going to say: 'Well, exactly where does the money come out of this and have we any guarantee that it will come out?' We might, therefore, give some thought to what can be called the 'projectification of agricultural development'. The object would be to divert more donor finance into the agricultural sector by subdividing an agricultural programme into its

components. Thus, for example, one donor would be responsible for a particular part such as the training and supply of the extension workers; a second donor would be responsible for the capital works; and a third would be responsible for something else.

I would like now to address a remark to what Jolly has said. He mentioned the acute shortage of manpower – so acute that it might douse down a potentially good development plan. At the same time, he mentioned that there was unemployment. There is a contradiction here. You have far more manpower than you can use and at the same time you are desperately recruiting from abroad. Why? The reason for the contradiction is that you are asking a society to do something which its members are incapable of doing: you have pitched the economic activity at a level which they cannot at the moment reach.

It can be said, of course, that this is a 'temporary borrowing of manpower capital in order to create organizations, institutions, projects which will give employment at a level which local people can reach'. The trouble is that the borrowing does not appear to be temporary. Wherever you look, you can see a growing habit where an economy is designed along lines which only expatriates can manage. In Africa certainly, economies are becoming more and more mortgaged to overseas aid in terms not only of finance but also of personnel. A growing number of expatriate experts, managers, engineers, electronics and computer engineers are pouring into these countries contemporaneously with an acute unemployment problem.

We should ask whether it is wise for both the developing countries and the donors to go on inventing institutions which require highly sophisticated personnel and large hunks of capital and which make no impact on the employment or the training of the majority of people. I feel that, when we think about the relationship of the economic plan to the whole population and to the type of society which is growing, we have to be very careful about introducing the end-product of the developed countries. The end product has implications in terms of the type of personnel it needs, of the type of subsidiary institutions which it needs – all of which have not had time to grow in the mass of the surrounding society.

TIMÁR I have a few general remarks based on the experience of Hungary – a country which one might place between the under-developed and the more-advanced countries. Considered as an under-developed or developing country, ours is perhaps rich but, as rich countries go, we are rather poor. Thus we have enough experience as to how one should, and how one may, develop a country – though our experiences are not always the best examples. But perhaps in this field – that of manpower planning

TIMAR
cont.

and of educational planning – we may make suggestions which may be useful in the developing countries.

First of all, I would note that in our general discussions three questions so far have been interlocked. The first is the methodology of planning, i.e., methodological questions about the relation between the needs of the national economy in manpower and education; the second concerns economic and educational policy; and the third concerns the form and extent of practical execution. Of course, I realize that these three questions have a close relation of cause and effect, and at the same time react upon each other. But I think that one must, nevertheless, consider these three questions separately.

In my opinion the starting-point is, and must always be, the plan itself. Why? Because planning has two aspects. One is that planning – and I completely agree with Harbison's integrated view of the term – is the basis for economic and also educational policy. At the same time, planning is also the most important means of the modality of execution. But these two aspects are not the same in the application of planning. The plan itself must first be drawn up, on the basis of which the policy-makers form their economic manpower and educational policy. Then, with the help of the plans, the policies have to be carried out.

In our own and in all developing countries, industry represents the future possibilities for development. At the present moment, however, I think that agriculture is more important than industry, especially with regard to planning and the solving of manpower and education problems. I feel, for my part, that the views and approach set forth in Dumont's paper [see Part III, page 181] are the best. He says – and I agree with him – that, in the developing countries, where most of the active population are employed in agriculture and will continue to be so employed for many years yet, we should devote most of our attention to agriculture and, perhaps, the methods and content of teaching should also aim at training for agricultural needs. I would like, for example, to stress Dumont's opinion that the curriculum of primary education should also include agriculture. This is most important for the developing countries. They have to develop on the industrial level; but industry cannot employ the majority of the active population in the near future, and this situation will continue to exist for many years yet. We must, therefore, develop our educational systems with an eye centred on agricultural needs.

RAO

Harbison's list does mention some of the major problems facing the developing nations. With regard to the first one – namely, rapidly growing population – I have several qualifying remarks to make.

The people who are most rapidly multiplying themselves are the people in the developed countries, like the United States and France. In the specific case of the developing countries, you can't reverse the great success of science in dealing with death – which is the leading cause of a population increase. You can't stop the death-rate from falling, and no one has gone to the length of suggesting that. In India, however, (and I feel this is true in a number of other countries as well) the government and the leaders of public opinion are trying hard to deal with the population increase by bringing about a decline in the birth-rate. There is a further point noted in Harbison's paper – and in others as well – which applies to the economy and society at large. I do not understand the exact meaning of the commonly used phrase about 'mounting unemployment in the modern sector and chronic underemployment in the traditional'. I would not say of India that there has been mounting unemployment in the modern sector. There has been, however, underemployment in the traditional sector, because there are too many people on the land who cannot be given productive employment on the basis of existing technical knowledge and agricultural practices.

It is important that agriculture be developed. But, even with this development in prospect, India will still have an excessive population on the land, and this makes me wonder why people think of agriculture as the final solution to the problem of unemployment in the developing countries. I don't see the logic in this point of view. Nor does economic history itself support it except perhaps in the case of very, very small countries like Denmark and New Zealand. Elsewhere – in countries like the United States, Japan, the United Kingdom, France, and Germany – the common experience of their economic history points in a reverse direction. It is that, in the last eighty to ninety years, despite an enormous increase in production, there was a steady – and still continuing – decline in the agricultural labour force in proportion to the working force of the population as a whole. If there is going to be a future change in the agricultural picture of the developing countries, it is going to be on the side of greater productivity. I am all for it – and for all aspects of rural development. But, even so, the development of agriculture is not going to solve the problem of unemployment or underemployment in the traditional sector of the economy. Unemployment does exist. But it must be faced in ways that will provide more outlets for employment by creating more demands and supplies in the economy. That is exactly what happened in the developed countries, and I think that economic development has more or

RAO
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less followed the same lines the world over. If you want to deal with the problem of unemployment in the developing countries, then, besides dealing with the population explosion, you have got to proceed along lines that will increase both supplies and demands. I would place particular emphasis on demands, because much of what is meant by the economic development of the West is really the development of demands which didn't exist before. You create demands and the supplies come. On this basis, you find that people who 100 years ago had a low-consumption standard of living are today enjoying a living standard – in terms of new goods, new commodities, new tastes and new consumptions – that is far higher than the consumption standards of the people to whom they were economically inferior a century ago.

DUMONT

I would like to follow on from what my predecessor has said in order to stress the events that are related to each other – first the world-wide tragic food situation, and next Rao's call for a fresh conception of development in the developing countries. I also want to allude to the work of a Brussels economist, Paul Bairoch, and to his study *Industrial revolution and underdevelopment*.¹

In this study, Paul Bairoch has shown for the first time that, contrary to what has been taught up to the present, the starting-point for the industrial revolution in the United Kingdom had been a continued increase in agricultural productivity throughout the half-century preceding that revolution. Agricultural productivity in the England of 1780 had reached a level approximately double the present level of agricultural productivity of African and Asian countries as a whole. Consequently, it can be said that in the latter countries the present level of agricultural productivity is not adequate to spark an industrial revolution on the sustained scale that starts inside the country itself.

There was a further study published by Paul Bairoch, this one in the March 1966 number of the review, *Development and civilization*. What it showed was this. In contrast with the English case where there was a half-century of increased agricultural productivity prior to 1780, in the first half of the present century there has been a 20 per cent decline in the productivity of the Afro-Asian peasant, for the whole of the African and Asian countries. Consequently, their 'start-up' conditions for industrialization are not getting nearer. They are getting further away, and the situation is becoming tragic. It is for this reason that I wrote, in collaboration with my assistant, Bernard Rosier, a book called *Nous allons à la famine* (Famine next).²

¹ Edition Sedes, Paris, 1963

² Editions du Seuil, November 1966

A figure central to the calculations about world famine is the rate at which the world has always increased agricultural production. An increase of 2 per cent per annum in food production has never been registered, except for 1947-59, for the developing countries as a whole. From 1959 to 1966, the 2 per cent has been neared, but never attained. Yet for the first time in the history of mankind, a 2 per cent population increase occurred in 1965. The official figures are 125 million births and 60 million deaths for a population officially estimated at 3,300 million inhabitants – precisely a 2 per cent growth – and the net gain has been increasing every year: 63 million in 1964; 65 million in 1965; and a possible 68 million in 1966. Meanwhile, agronomists like myself see no likelihood of exceeding rapidly the world-wide average of a 2 per cent limit on food production. For whatever the state of research, whatever the prospects for increasing agricultural production, when it is said that the sea can supply much, or that synthesis of foods or petroleum yeasts can do that, no one also says at what speed this will come about through new research.

We simply must draw up a balance sheet of the United Nations ten-year development period in the field of food supply. In this field, we stand where France was on 18 June 1940 when de Gaulle said: 'We have lost a battle, we have not lost the war.' On that day, French strategy began to be successful. So, too, the first battle for food supply is completely lost. This is a very serious matter because, when we fail to recognize that a setback has occurred, we no longer take the trouble to devise and execute a strategy for success. But, if we recognize the inadequacy of the measures taken in favour of the developing countries, if we revise our strategy in the light of our setbacks, we have a limited chance to escape world famine.

Some further observations.

First, the chronic underemployment in the traditional sectors is connected with the poor diversification of agriculture. The case here could be considerably improved if we got away from the too-frequent mono-cultivation, and if, in tropical countries with only one rainy season, we extended irrigation works to permit cultivation even in the dry season. These irrigation works, however, are extremely expensive and are not always the most profitable.

Second, when there is talk of chronic underemployment in the traditional sector, it is worth remembering that this underemployment is merely seasonal. At stated times, there are peak loads of work – hoeing, sowing, weeding – which employ everybody for a few days per year. Everybody is used and this makes it an obligation to have too many hands for the rest of the year.

DUMONT *cont.* Third, there has been talk of 'specialized skills'. Well, I think that many of the specialist techniques required for development are not acquired at an agricultural school. They are acquired through the practice of agriculture. Thus, the need to link a school to an agricultural undertaking in the form of farm-schools for learning the new techniques in practice.

CHAIRMAN In the history of today's developed countries, as some of you have noted, there was a long period of agricultural development which generated income and savings, from which industrial development arose. In the last fifteen years, however, it would appear that theories of development have been followed which did not coincide with these experiences of former times.

RAO I don't accept the thesis that all economic development took place with an initial emphasis on agricultural development, and that this made possible the industrial development of the countries concerned. The argument, as it appears in the books I have read, turns on a different issue. It is whether the process of development should start at consumer industries and go on to heavy industries, or whether the start should be made with heavy industries and then on to consumer industries. It is altogether a new thesis which Harbison is advancing when he says that the newly developing countries should go in first for agricultural and rural development.

India no doubt has made mistakes in its own approach to the task of increasing agricultural production. We talked about the need for fertilizers, for example, but we did not provide the domestic production of fertilizers, or the foreign exchange for the fertilizers. The major thing we learned is that agricultural planning is not something confined to agricultural programmes alone. It must be concerned with the entire economy, including education, transport and industry. All these factors must be linked up with agricultural development and, since we have learned this lesson, there will be more effective implementation – more understanding of the faults and failures in agricultural policy.

Similarly, we are now entering a stage with respect to population control where the things we do are likely to be more effective. The questions here do not merely involve matters of economic development, they affect the way a person should live with his family. Population control, therefore, means interference with the private lives of millions of people. This is doubtless required, yet it is far better for the individual concerned to do that interference by himself than to have someone from the outside do it. I think we can bring about a new orientation of education and manpower planning without bringing up new theories of economic development. If we bring up such new theories, we will unneces-

sarily create the wrong climate for the consideration of the very serious and important work which has got to be done on the whole subject of education, manpower planning and economic development.

LÊ THẦN KHÔI In the classical theory, capital is formed by reducing consumption. But this cannot be applied in the case of the developing countries. They cannot diminish consumption. We must reverse classical theory in the sense that we must increase the consumption of the population in order to increase its working capacity. I refer here to the mass of the population – and not to the privileged minority whose consumption must in fact be drastically reduced. We must show farmers that their more efficient use of tools and fertilizers can bring about benefits to themselves in the form of an increase in the volume of things they can produce.

TIMÁR I am in agreement with those who say that educational systems must be adapted to the requirements and possibilities of different countries and different circumstances. I imagine that in the developing countries, conditions exist that hinder the working of a system which in other countries has followed a development cycle of a hundred or two hundred years. I do not mean to say that the developing countries must begin everything from the beginning, but I hope it is understood that we must bear in mind the possibilities and the needs special to given countries. For this reason, therefore, I think that higher education as we understand it is not the most important thing for developing countries. The most important is literacy and the education of the masses.

MWINGIRA In Tanzania, as Thomas has already indicated, we have decided as a matter of policy to freeze primary education. The policy has been criticized, and there are pressures against it based on the human right to literacy. But a right of this kind has to be seen against the realities of our economy as reflected in the limits of our manpower and budget resources. We have had to cut the coat to the cloth.

We also have had to make choices as to who is educated for what. We feel that in this direction lies the answer to the shortages of manpower our country faces. There was a time when no one wanted to be trained for architecture, dentistry or agronomy. The training that most appealed to young people was the training that would make them doctors, engineers and teachers. We had to use various methods to direct them into courses that would result in trained manpower of the kind the country needed. Freedom of choice had to be limited to what was possible within the country.

In developing countries, not much emphasis was put on informal

MWINGIRA
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education as a way to personal uplift. It was looked down upon as being undesirable, and the government had to change this idea. The same was true of specialized institutions for education. They too were looked down upon. But they are now viewed as being more useful. At the same time, when people criticize the educational content of our schools, they don't give us a substitute for what they criticize. The adaptation of a curriculum is not an easy task.

LOURIÉ

I want to comment on the dilemma presented by the so-called adaptation of education to the demands of development and of surroundings. All of us know about the kind of adaptation of content which consists of replacing material taken from European folk-lore by that taken from African folk-lore, while keeping the educational system otherwise unchanged. My own immediate interest is in another form of adaptation which might be called structural, and which poses this question: how many years of training are required to produce various sorts of specialists and experts needed to meet important needs, having in view the economic capacity of developing countries to support such training?

Take the case of an engineer (or doctor) who, after his secondary studies, undergoes a training period of six or seven years at a university in his own country or abroad. It seems obvious that the expectations of such a man will take a definite form. He will not only expect to receive a salary commensurate with his training; he will also hope to find a professional, technological and social milieu which corresponds to his considerable investment in training. These expectations generate the problem indicated in Jolly's paper [see Part IV, page 237] – the problem of salaries tied rigidly to prescribed levels of education.

Jolly makes the point that, as long as there are expatriate experts in African countries paid at rates corresponding to those of their country of origin, plus special expatriation allowances, it is natural that local citizens possessing an equivalent diploma will demand more or less comparable earnings. While I agree with him, I suggest there is another important side to the problem. It is whether the African country, at this stage of its development, would not be better off with a larger number of differently defined specialists and experts who can be trained more quickly and at lower cost, than with a much smaller number of advanced-country-type specialists costing much to train and to pay. Under the former of these two conditions, the African country could accelerate development and meet social needs while also reducing the problem of equivalent salaries and, incidentally, the 'brain drain' problem.

To be more specific: wouldn't a given African country be better

off for many years to come with types of technicians who have had only three or two-and-a-half years' training after their secondary studies rather than four or five? Wouldn't such a country, for example, make a greater dent in its health problem with a larger number of doctors of the type that existed a few years ago – known as 'African doctors', who were trained in two or three years, after secondary studies – as against a handful of highly trained 'European type' doctors?

I know it will immediately be objected that this type of structural adaptation, involving shorter periods of training, is 'cut-price' education. But aren't we compelled by our studies of costs, output, salaries and employment to reflect that this kind of structural adaptation is a realistic approach to the needs of the transitional period Africa is in?

Finally, as a further amendment to Jolly's thesis, I would say that it is not only a problem of salary level which counts, but also of prestige and general environmental conditions. I would quote the case of the Eastern Province of Pakistan where at present there are only 1,600 engineers for a population of 65 million inhabitants, mostly working in the public sector. The basic problem is much less one of better remuneration – to keep certain engineers – than the fact that the engineers are not held in esteem. So they demand a higher social status, a professional prestige equivalent to that of the old ICS (Indian Civil Service). Thus, in this case, it is not mainly a question of salary but of professional environment, social environment and of prestige which act as incentives.

DEBEAUVAIS The Chairman has invited me to list some of the unanswered central questions – and dilemmas – posed by the papers presented to this symposium. Let me start with a comment about the relation of planners to educational criticism and reform. In this respect, I believe, and judging from our discussion so far, there has been a recent change in the attitude of the planners. Previously, the planners (especially if they did not happen to be professional educators) pointed out that they only treated education from an outside and technical point of view, leaving the problem of initiating educational reforms to the educators. But now it seems the planners have become more impatient. They no longer put educational problems in brackets. Instead, they are beginning to formulate strong criticisms and even, at times, basic criticisms of education.

But what criteria should planners apply in appraising and criticizing education? When the problems proposed for this symposium are examined, it is difficult to find replies in the papers

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cont.

which employ the internal criteria proper to the educational system. Take, for example, the problem of disparity and distortion between the different levels of the educational system. It calls for knowing what the disparity exists in relation to. The solution calls for more than statistics. I do not believe that an ideal school pyramid can now be made with ideal proportions between the various educational levels. One cannot simply take as a criterion the intelligence of individuals, arranged in a pyramidal form to which the educational pyramid should correspond. But how is one to judge what the 'right' pyramid is, and more difficult still, how is one to bring it about?

The educational system, as is pointed out in some of the papers presented to this symposium, has an extraordinary inertia on one side, and a self-propelling tendency on the other. The rate of passage from one level to the next stays remarkably constant with time, but every increase at the lowest level has inexorable repercussions later on at each subsequent level. This phenomenon seems to appear in all the comparative statistics retracing the evolution of education in the underdeveloped countries and in the industrial countries as well. One could perhaps derive certain fixed mathematical co-efficients from these statistics which could make educational planning mechanically easier. But this methodology begs the formidable question whether and how educational planning should seek to alter not merely the size but the shape and character of the educational system.

Another troublesome problem is to fit the right educational qualifications to specific job classifications, and to determine whether these educational qualifications can best be met by the formal educational system or outside it. Some of the papers that we have under consideration have rightly pointed out that the school system is not the sole producer of technical qualifications and, as a consequence, that it is necessary to use a broader concept of education for planning purposes. In practice, however, there are not yet many examples of educational planning beyond the formal school system. Several suggestions have been made which appear interesting for discussion. Mention has been made of current literacy campaigns and of the new strategy defined by Unesco, seeking - in much tighter manner than in the past - to tie literacy to vocational training and to economic development. But I believe that the plans examined up to the present have not yet translated this idea into a useful reality for planners.

A very important new problem put by most of the papers is how to form the new leaders needed to help spur the development of what is known as the traditional sector. Many suggestions have been made in these papers to this end. Certain of the papers

[see pages 125 and 168], moreover, have stressed not only the traditional agricultural sector but also the traditional sector with urban areas – such as certain commercial activities and, above all, local handicrafts. Here too, developmental needs perhaps call for new types of in-school or out-of-school training and for new types of occupational categories.

Attempts have also been made to widen the notion of economic development. Several persons, notably Professor Harbison, have pointed out at this symposium that social-development factors make national development much wider than economic development and that due account must be taken of this. But how is this to be done correctly? A few answers were suggested. But question marks are mainly found, in the different papers.

There is also the problem of the students' academic and career aspirations, which constitute essential data for realistic planning. Someone observed here that close attention must be given to peasant populations who send their children to school and who have, perhaps, other ideas than rural development in mind for their children.

This in turn connects with the problem of *behaviour*, which differs from *aspirations*. Several studies made on the aspirations of pupils show that certain employment aspirations coincide with the greater part of labour requirements. But it is still necessary to have economic incentives, including a salary structure, that encourage these professional aspirations to materialize in effective job choices.

This opens up other questions. For example, how much can the school do about certain social factors? Can it be that in certain of the documents too much is expected from the school – that there is entrusted to it a whole series of new tasks for which it is not yet ready? To what extent can the school really be an agency for development, an agency for agricultural development, a factor for innovation in educative matters, and for transforming the population's attitudes and behaviour? While there are those who argue by example that the school can be all of these things simultaneously, I believe that all of us know many cases where efforts to widen the school's role have come to grief or have run into very great difficulties. If the proposed school revolution is a 'must', perhaps one thing has to be accepted in advance. It is that there will be many setbacks before it can be clearly seen how we can introduce new parameters and new types of schools into planning.

II Employment

- G. Skorov The absorptive capacity of the economy
V.K.R.V. Rao Educational output in relation to employment
 opportunities, with special reference to India
A. Callaway Unemployment among school leavers in an
 African city

Colloquy

The absorptive capacity of the economy

The 'absorptive capacity' of an economy is usually understood to be the ability of an economy to generate useful employment for manpower produced by the education and training system. In developing countries, there is a serious disparity between the ability to create new jobs and the ability to produce skills. The magnitude of this problem in Tanzania is shown in Table 1.

TABLE 1. Employment prospects and new entrants to the labour market in Tanzania, 1964/65-1968/69

New jobs (cumulative for five-year period)	44 000	
Wage agricultural employment	66 000	
Non-agricultural employment		110 000
Total		231 520
Estimated standard VII/VIII leavers		1 150 000
Estimated all new entrants to the labour market		

SOURCE Estimates of R.L. Thomas, Ministry of Economic Affairs and Development Planning, Tanzania, 1965

As can be seen, only one in ten new entrants to the labour market has any hope of securing paid employment; the remaining nine have no other alternative but to subsist by self-employment, or more particularly, by living on the land and producing food for subsistence and cash crops for sale. This is a serious situation for society as a whole, and even more so for those who have benefited from education and acquired aspirations for a better way of life which may never be realized. The non-utilization of people in whom a considerable amount of scarce resources was invested constitutes, from the economic point of view, pure waste. There is sometimes a tendency to blame education for this state of affairs. This is certainly an oversimplification, for education, at worst, is only partly responsible; its main role has been to highlight the issue of growing unemployment in an underdeveloped economy. With or without education, there

will be unemployment, or at least underemployment, in most of the developing countries for years to come, and the fact that an important share of public resources was spent on educating people only makes it more imperative to put their talents to productive use. It should be stressed that, in this respect, there is a great difference between primary-school leavers and the products of secondary and higher education.

There is such lack of high-level skills in Tanzania that the main problem for the next decade is not how to use them, but how to produce them; the problem of unemployment of the highly educated observed in India and some other countries will not arise in Tanzania for some time to come. But the situation is very different with regard to primary-school leavers. This problem has been studied by a number of experts,¹ who have put forward suggestions for its solution. The Government of Tanzania is fully aware of this problem, and the decision to restrict for the time being the expansion of primary education was partly motivated by it. The relatively high priority given to agricultural development in the plan is also a way of tackling this problem. But there is no consensus of opinion on what further practical steps should be taken for solving the problem.

In the coming years, the primary schools will turn out annually 45,000 to 55,000 school leavers, i.e., about 20 per cent of the corresponding age group. Only 2.7 per cent of the age group will go into secondary school by 1969; the remainder will have to look for employment. But whereas, in the past, a primary-school certificate was enough to secure a junior white-collar job or to qualify for entry into grade C teacher training, this is no longer the case. Moreover, there is a limit to government employment, and primary-school leavers can no longer count on employment in this field. A small proportion can expect to find employment in the non-agricultural private sector. The remainder must either return home and resume farming, or swell the ranks of the unemployed. The evidence shows that the majority are inclined to take the latter course rather than the former, and this for three main reasons.

The first, and paramount, reason is an economic one. Education was seen not only as satisfying a thirst for knowledge, but also as leading to a higher standard of living, especially when the initial salary of a university graduate in government service (with dependants) was £760 a year while the average income per head of population was £20, that is, thirty-eight times lower.

¹ See notably Archibald Callaway, *School leavers and the developing economy of Nigeria*, Ibadan, 1961; Guy Hunter, *Education for a developing region*, London, 1963; and Adam Carle, *Educational strategy for developing societies*, London, 1963.

When, after independence, a small number of educated Africans moved into positions formerly held by expatriate colonial administrators and inherited, along with their responsibilities, the high salaries and amenities that went with the jobs, the population was tempted to link this affluence with education. It may be noted, in this connexion, that the salary structure in the civil service after independence has been based on the colonial pattern. Steps have been taken recently toward reducing the wide gap in incomes between a small section of the population and the great mass of the people, but this will necessarily be a long process. Nevertheless, the primary-school leavers who stay unemployed in the cities, relying on various forms of assistance from their relatives or co-villagers, harbour the hope of being able one day to continue their education and to climb up the social ladder. The second reason is usually ascribed to wrong attitudes towards farming as an occupation, acquired at school and shared sometimes by school teachers, some of whom come from the cities. While the hardships of rural life certainly come into it, no distinction is made apparently between traditional agriculture and modern farming; failure to succeed in the city means failure *tout court*.¹

The third reason seems to be the orientation and content of primary education as it is given at present. It differs little from the old model, the main objective of which was to prepare the pupil for further education and an auxiliary job in the civil service; in other words, primary education does not equip the individual for the way of life he is most likely to lead and is of very limited value in the conditions of a predominantly rural economy. It may be added that senior Tanzanian officials are aware of this problem; the Conference of Regional Commissioners, which met in October 1964, passed a resolution stating that there was 'something wrong in our education system. In the past, agriculture was not given its proper place in the school syllabus. As a result, many school leavers despised farming and favoured white-collar jobs. Although this mistake has been discovered for some time, not enough propaganda has yet been made to change the pupils' ideas. The ministry of education should, therefore, be asked to stress the importance of agriculture and farming in schools.'

The argument about the content of primary courses in rural areas has been going on for many years. The two extreme views are, on the one hand, that the purpose of primary education, whether urban or rural, is to spread literacy in the broad sense of the word and to give the pupil some funda-

¹ The question of attitude is discussed by V. L. Griffiths in *The contribution of general education to agricultural development, primarily in Africa*. Paper prepared for the Agricultural Development Council Inc., 1965

mental notions of a modern scientific outlook, and, on the other, that since nine-tenths of the pupils acquire knowledge which has no real relevance to their way of life after studies, the traditional primary education should be replaced by a sort of vocational course in agriculture (school-farm) which would be directly productive.¹ There are, of course, various shades of opinion between these two extremes, including a suggestion to devise two different curricula, one for the academic stream, the other for the farming stream.

During the past few years there has been a growing consensus of expert opinion in favour of revising primary curricula and gearing them more closely to rural environment without, however, introducing vocational agriculture at primary level. The general orientation for the revision of primary curricula was first laid down by the Unesco/ECA-sponsored Addis Ababa conference of African states which stated that 'while it should be general and not vocational in its intention, it should include elements which seek to develop an appreciation of the value of work with the hands as well as with the mind'.² A fair amount of agreement has been reached between Unesco, FAO, ILO and Unicef experts on this basic issue. A recent Unesco study group on agricultural education and sciences re-emphasized that 'primary education cannot claim to prepare for a trade. If its length is no less than six years, then the maximum which can hopefully be attained is the introduction in the curricula of substantial insights into rural life.'³ According to A. E. G. Markham, FAO educational adviser, 'there is an impressive volume of experience leading to the conclusion that the teaching of vocational agriculture in primary schools is of little or no value in producing future farmers or agricultural technicians. Vocational agriculture cannot usefully begin at too early an age - possibly not less than about 16 years of age.'⁴ Lastly, the African Conference on Progress through Co-operation 'felt generally that the aim of the elementary school should be to provide

¹ Cf. Thomas Balogh, *Land-tenure, education and development in Latin America*, IIEP Latin American seminar, 6 April-8 May 1964, and René Dumont, *Agricultural development, particularly in tropical regions, necessitates a completely revised system of education*. Conference on the Methodology of Human Resource Formation in Development Programmes, Frascati, 24-28 June 1963 (mimeographed)

² Conference of African States on the Development of Education in Africa, *Final Report*, Addis Ababa, Unesco/Economic Commission for Africa of the United Nations, 1961

³ Unesco, *Study group meeting on agricultural education and sciences*, Paris, 15 October 1965

⁴ A. E. G. Markham, *Agricultural education and training in Africa*, Annual course on educational planning, Dakar, IDEP, 18 October-11 December 1965, Lecture II (mimeographed)

a broad basic education and basic skills, and not to prepare children for specific forms of employment'.¹

It is generally thought that a two-track system of primary education would have many adverse effects. For example, it was felt that it would drive the village and the city further apart, seriously weaken the basis of an integrated national system of education – quite apart from creating insurmountable difficulties in the selection of pupils for the two streams – and would reduce still further the already slender possibilities of recruiting teachers from rural areas. In short, it would create more problems than it could solve. It was further believed that the best way the school leaver with minimum skill and knowledge could be equipped for agricultural work would be by short-term vocational post-primary training schemes organized on a large scale. This would also relate the primary-school curriculum to the rural environment.

Leaving aside the problem of financing and staffing such schemes – a problem which is far from being solved – it should be emphasized that all these measures are necessary but not sufficient to deal adequately with the problem of primary-school leavers. The crux of the matter lies not so much in education as in the appropriate economic and social conditions in which the skills thus acquired can be productively applied. As was emphasized by the Conference of African States on the Development of Education in Africa, 'if primary education cannot be integrated into the economy, this is equally a challenge to revolutionize the economy'.² This is largely a question of land tenure, credit facilities, marketing, etc.; without land, initial capital and a market for surplus produce, vocational post-primary training may be wasted just as much as primary education is wasted now.³

The problem of economic opportunities in agriculture also depends heavily on the amount of resources devoted to agricultural development. The Tanzanian five-year plan gives a relatively high priority to agriculture (9 per cent of total expenditure) but, in absolute terms, £48 million for a rural population of close on ten million is not much. Yet it is hard to think of any significant re-allocation of resources that would not prejudice other major objectives of the plan. What can be conceived, however, is a shift of emphasis in the agricultural sector from the 'transformation approach' (new settlement, irrigation, use of machines), which is very costly, to the 'improvement approach' (modernization of traditional farming methods through extension

¹ African Conference on Progress through Co-operation, *Preliminary report of committee IV: the development of human resources*, Addis Ababa, June 1965

² Conference of African States on the Development of Education in Africa, op. cit.

³ Cf. A. Callaway, op. cit.

work, community development and co-operative schemes), which is likely to increase the output and employment opportunities more rapidly and at lower cost.¹ But to change significantly the employment situation would require a much larger investment effort than Tanzania can afford in the next few years.

One of the main reasons why the employment problem in developing countries is so acute lies in the apparent contradiction between the aims and means of development, i.e., rapid modernization through the use of most modern technology on the one hand, and the current surplus of labour on the other. For modern capital-intensive techniques are primarily designed to save labour. This apparent conflict could be partly resolved by the use of what has been called 'intermediate technology'. This is a kind of technology which gives a higher productivity than the traditional techniques and, at the same time, is cheap and simple enough to be used advantageously in developing countries. A figure of £70 to £100 of equipment cost per average work-place was advanced as a minimum for such technology.² Relatively little is known about this technology; in particular, whether investment in it would pay, how it will affect the input/output ratio, what would be the competitiveness of the output produce, etc. But such questions could only be answered by a practical application of such a technology.

Another way of easing the problem of unemployment is the 'human investment' approach, i.e., public works on a large scale with an extensive use of labour and with little or no capital investment. This method was used in the early stages of development in a number of industrial countries, and it is now being used in several African countries, such as Guinea, Nigeria, Tunisia and Ghana, for a variety of projects : road-building, water-supply points, well-digging, building small dams, markets, schools, and municipal buildings. The self-help schemes under the community development programme in Tanzania are of this kind. But the use of this method on a large scale requires an increased production of foodstuffs, without which it is impossible to transfer a substantial proportion of the agricultural population to non-agricultural activities.

Such problems can hardly be called educational, but then the whole issue of school leavers and of the capacity of the economy to absorb them is more economic and social than educational in character. It is directly related to the problem of priorities in national development and can be solved only in the wider context of the over-all economic growth.

¹ I am generally in agreement with the series of practical proposals put forward by Hunter in his paper for this symposium (See page 161)

² Cf. E. F. Schumacher, *The middle way*, Fortune, Winter, 1965/6

Educational output in relation to employment opportunities, with special reference to India

India, even before its independence, had an educational system that was well developed at all levels – secondary, higher, professional and technical. Further, in absolute terms, its annual output of educated people exceeded that in African and Asian countries with the possible exceptions of Japan and perhaps China. India, therefore, unlike African and most Asian countries, did not have to start from scratch in meeting personnel requirements for a developing nation.

Still, in fundamental respects, India's plight resembled the one known to other peoples in Africa and Asia. The vast economic development programme on which India had embarked, starting with the five-year plans, led to a much larger demand for technical personnel than the pre-plan educational structure was in a position to supply. At the same time, many factors converged to create a demand for an all-out effort to increase India's primary education far beyond the pre-plan years, when it covered only about 40 per cent of the 6–10 age group in the population. There was the constitutional directive calling for universal primary education up to 14 years of age. There was the growth of population, resulting not from any increase in fertility, but from a 60–65 per cent drop in the death-rate, reflecting progress in the science of dealing with death. There was the simple fact of independence, and the fillip it gave to the public demand for education. There were also the development programmes with their increased employment opportunities in both the public and private sectors. All these combined to bring about an almost spontaneous call for increasing the available resources for India's secondary education.

At the same time, there was a marked increase in the demand for university education. This was due in part to the factors just mentioned. In part it was due to the vastly increased output of secondary-school leavers. The aggregate result for India can be described as an 'educational explosion' and its main elements can be seen in Table 1.

The financial implications of the vast expansion which took place in educational output are underlined by the way the index of growth of education rose from 100 in 1950–51 to 491 in 1964–65. It is true that part of this increase

TABLE 1. Growth of education: enrolment and admissions, 1951-66 ¹

Category	1955-56	1960-61	1965-66
Classes I-V	131	183	269
Classes VI-VIII	129	201	330
Classes IX and above	154	243	430
Arts, science and commerce courses in colleges and universities	172	242	364
Degree engineering courses ²	143	335	680
Diploma engineering courses ²	178	437	881
Medical colleges ²	140	232	460
Agricultural colleges ²	188	532	755

1. 1950-51 = 100
2. Annual admission capacity

was due to the increase in population. But the bulk was due to the expansion of educational facilities for the existing population as evidenced by the fact that, beginning with an index number of 100 in 1950-51, the *per capita* expenditure on education itself increased to 369 in 1964-65. It should be added that the rate of growth of educational expenditures was also much faster than the rate of growth in national and *per capita* income alike. Thus, against a national income increase from 100 in 1950-51 to 210 in 1964-65, the expenditure on education increased from 100 to 491. At the same time, while the *per capita* national income increased from 100 in 1950-51 to 158 in 1964-65, the *per capita* expenditure on education increased from 100 to 369. Thus, during this period, the expenditure on education as a percentage of national income has increased from 1.2 in 1950-51 to 2.8 in 1964-65.

The reality behind this 'education explosion' gains an added physical dimension when we realize that the total number of pupils enrolled at all levels of education in India increased from 24.2 millions in 1950-51 to an estimated 69.6 millions in 1965-66. Table 2 outlines the development of enrolment from 1950-51 to 1965-66.

There can be no doubt that this vast increase in the educational output during the first three plan periods has substantially contributed to the economic and social development of the country and that, on the whole, personnel supply has posed no major difficulty in implementing India's development programmes. For this reason, the number of foreigners working in India's educational, industrial, agricultural or government establishments is negligible compared with the total number of Indian nationals employed in these same establishments.

Does all this mean that India's educational output has been deliberately regulated with the object of meeting the growing employment requirements of India's development economy? The answer is no, except for certain

TABLE 2. Enrolment in India at different educational levels, 1950-51, 1960-61 and 1965-66 (in thousands)

Category	1950-51	1960-61	1965-66 ¹
Classes I-V	19 154.0	34 994.0	51 500.0
Classes VI-VIII	3 330.0	6 705.0	11 000.0
Classes IX and above	1 220.0	2 960.0	5 240.0
Vocational and technical schools	117.0	278.0	440.0
Colleges and university departments for arts, science and commerce courses	302.0	732.0	1 100.0
Engineering and technology at degree level	4.1	11.4	28.0
Engineering and technology at diploma level	5.9	25.8	52.0
Medical colleges	2.5	5.8	11.5
Agricultural colleges	1.1	5.6	8.0
Teacher training for secondary schools	5.8	19.5	26.0
Teacher training for elementary schools	70.0	123.0	160.0
Total	24 212.4	45 860.1	69 565.5
1. Estimated			

specific employment opportunities, such as categories of engineers and other technicians, medical personnel, and trained teachers for elementary and secondary schools. In the latter cases, estimates were made of increased employment opportunities based either on investment magnitudes in such fields as mining, construction, transport, and industry generally, or on social norms accepted for plan implementation in such fields as education, medicine, and public health. But the main output of educated persons - namely, secondary-school leavers and graduates and masters in arts, science and humanities - did not result from planned targets involving supply projections based on estimated demand projections. It resulted in part from the growth of the educational system arising from the broadening of its base together with the general increased interest among growing sections of the community in getting an education. It was also partly the result of an increased stress on education for girls and the special facilities the government provided to satisfy this need. All this meant that no attempt was made to link the bulk of the educational output to employment opportunities. Still, it is worth noting that the non-specialized educational output, representing most of the total output, will fill almost 90 per cent of the employment opportunities available to the products of the educational process.

At the same time it must be admitted that there has been a substantial and growing unemployment of the educated. A set of comparative figures tells part of the story. In 1950-51 the gross educational out-turn in high-school leavers, intermediates and graduates was 0.433 million and the number of persons who enrolled themselves on the live registers of employment exchanges in search of employment was 0.183 million. In 1960-61, the corresponding figure of educational out-turn was 1.076 million against which, with the lag of one year, the number of persons enrolled on the live registers of employment exchanges seeking employment was 0.75 million. These figures, broken down by the educational categories, can be seen in Table 3.

TABLE 3. Gross educational output and number of people on the live registers of employment exchanges in India by broad educational categories, 1950-51 and 1960-61 (in thousands)

Category	Gross output		On live registers of employment exchanges	
	1950-51	1960-61	1953	1962
<i>Secondary level</i>				
<i>Intermediate</i>	241.1	623.1	125.0	544.0
Graduates in engineering	78.8	132.5	17.0	72.0
Graduates in medicine	2.2	5.7	1.1	1.7
Graduates other than in engineering and medicine	1.6	3.4	0.6	0.3
	52.8	151.2	19.0	65.0
<i>All graduates</i>	56.6	160.3	20.7	67.0
Total	376.5	915.9	162.7	683.0

The table shows that while there has been an absolute increase in the number of engineering graduates who registered themselves in employment exchanges, there has been a fall in their proportion to the out-turn, while in the case of medical graduates, there has not only been a fall relative to their out-turn but also a fall in the actual number. But in the case of graduates other than in engineering and medicine, there has been a large rise in absolute numbers and also some rise in their proportion to out-turn. The position is even worse in the case of secondary-level school leavers and intermediates. The case here is summarized in Table 4, in percentage terms. A general conclusion, therefore, is inescapable. It is – to repeat – that educational output in India exceeds employment opportunities in the case of matriculates, intermediates and graduates in subjects other than medicine

TABLE 4. Relation between gross educational out-turn and number of persons on the live registers of employment exchanges in India, 1950-51 and 1960-61 (percentage)

	Educational out-turn, 1950-51/number on live registers of employment exchanges, 1953	Educational out-turn, 1960-61/number on live registers of employment exchanges, 1962
<i>Secondary level</i>	51.8	87.3
<i>Intermediate</i>	21.6	54.4
Graduates in engineering	50.0	30.0
Graduates in medicine	37.5	9.0
Graduates other than in engineering and medicine	30.0	43.0
<i>All graduates</i>	36.6	41.8
Total	42.3	69.7

and engineering; further, in the case of secondary-level school leavers and intermediates the position is much worse than it is for graduates.

Here, next, I want to consider the problems that arise when one tries to link educational output to employment opportunities, and I shall draw on Indian conditions and experience to illustrate some of the realities of the matter.

The first problem is the lack of precision in the concept of employment opportunities. Even in the developed countries of the West, a significant proportion of the labour force does not work for wages or salaries. They are not employees, but are self-employed. In most countries, self-employed persons are to be found in agriculture, small or cottage industries, repair and maintenance services, retail trade and the professions. In the developed countries, agriculture and small industries of a one-man or familial character account for a rather small proportion of the labour force, while trade and repair and maintenance services are increasingly coming under the control of large organizations with the result that there is a steady increase in the employee element in the labour force engaged in these occupations. Professions, of course, continue to have a large element of the self-employed, though the tendency is towards an increase in the employee element owing to increasing governmental responsibilities in the social field with the rise of the developed manpower and welfare state.

In the case of India, however – and this is true of most other developing states – agriculture, small and cottage industries and retail trades account for a far larger proportion of the labour force than in the developed states, with the result that the magnitude of the self-employed is much larger in her case. The growth of modern industry and transport and the increasing role

of government in developmental and welfare activities is bringing about a rapid increase in the number of employees in absolute figures in the Indian economy; India today has over fourteen million persons working for wages or salaries in the public sector and in private industrial and commercial establishments employing over twenty-four persons each. But the fact still remains that the vast majority of the labour force in India is self-employed, of which again the bulk is engaged in agriculture.

It is difficult to lay down formal educational or training qualifications for persons who employ themselves in their own business or occupation, and it is certainly not possible to enforce them even if such norms could be formulated. Yet it cannot be denied that self-employment (or 'workers on own account' as it is sometimes described) is certainly a part of the employment opportunities that exist or also grow in a developing economy. In fact, when the Indian five-year plans include the subject of employment in their programmes and targets, they invariably take into account the self-employed and those employed on hire. This is one of the major difficulties to be faced in linking educational output to employment opportunities in a developing country like India. At the same time it reveals the limitations of the manpower-planning approach to the content quantum of educational output. There can be no two opinions, however, about the reality of the connexion between education and development or of the need to make it more purposeful and more effective. To link education to development we have now to go beyond manpower planning and extend the link to the whole field of human resource development.

The second problem that faces anyone who wants to link educational output to employment opportunities is the difficulty of job description and the difficulty of marrying job requirements with specific educational or training programmes. This problem is, of course, common to all countries, but is more troublesome in the case of a developing country like India. Specialization in skills – which also means more precision in job description – has not yet reached the levels it has in the developed countries. The result has been that manpower planning has been directed to broad rather than detailed categories, and that it has entailed a greater degree of flexibility in educational planning than is perhaps consistent with the strict levels of planning. In-service training, refresher and orientation courses and training programmes tailored to suit special requirements have perhaps a larger place in India's educational planning than in the case of the more developed countries.

From the point of view of manpower planning, India has perhaps done best in the fields of technical education, medical education and teacher training. Even so, some difficulties have arisen in these fields. Take engineering education, for example. We have two problems here. One is in regard to civil engineers, who are mainly required for construction work, and who

constitute the largest single category of engineers that we are producing. They are badly needed for construction projects in irrigation, building and industry generally. But when the construction is over, a number of civil engineers find themselves unemployed; at the same time, there are new construction projects which draw in new batches of civil engineers. Here we have a problem of mobility, dovetailing and time phasing of different construction projects in terms of engineering personnel requirements, and the planning of additions to the output of civil engineers. A possible solution may be the formation of civil engineers into a national corps with security of tenure and liability to serve in any part of the country.

The other problem is that of the very unsatisfactory position prevalent at present in the ratio of engineers to diploma holders. The current ratio is of the order of 1 : 1.6, whereas it is agreed that it should be of the order of at least 1 : 3. How are we to bring about this change? There is no doubt that today a number of engineers are under-utilized in the sense that they perform tasks more appropriate to technicians or diploma holders. It is also a fact that this has led to the emergence of some unemployment among diploma holders, despite our long-range wish to bring about a substantial increase in their number. Paradoxically enough, we also find a certain hard core of unemployment even among engineering personnel who are holders of engineering degrees. I feel that this problem cannot be solved without improving the content of the education imparted for both the engineering and the diploma courses. The diploma courses need to have a more practical content – at least the new institutions should be located in industrial centres – and be tailored more toward producing technicians rather than poor imitations of engineers. Simultaneously, the academic content of the engineering courses should be improved and brought more into line with the corresponding courses in the developed countries. An attempt should also be made to change those existing employment practices which lead to a dilution of job content and the employment of engineers in tasks for which the diploma holders would be quite adequate.

In the case of medical education, the problem is somewhat different. While the number of medical graduates produced is in excess of medical appointments there is a great shortage of doctors for employment and there are many unfilled vacancies. This is because more than 50 per cent of medical graduates prefer to settle down in private practice rather than to accept government posts, as the incomes they get from private practice are much larger than those they can get from governmental service. Moreover, many of the vacancies in governmental medical posts are in rural areas, and doctors are unwilling to accept jobs in such areas because of their lack of comfortable living conditions. The remedy is threefold, namely, a rise in salaries, an improvement in rural living conditions, and the introduction of an element

of compulsion for rural medical service. It is the fulfilment of these conditions rather than a mere increase in the output of medical graduates that will solve the problem of the shortage of doctors for employment.

The linking of educational output to employment opportunities in these and other professional fields depends on something more than a measure of flexibility in the educational system. It also depends on a careful watch over shortages and surpluses in the relevant occupational categories. India has a well-developed system in an employment-market information service which collects data, through the employment exchanges, about vacancies and placements. But the data are not adequate, as many vacancies are known and filled without the intervention or even the knowledge of the exchanges, while the available data themselves often are hard to interpret because the shortage may be due only to unwillingness on the part of qualified personnel to accept jobs at the salaries offered.

In fact, this is one of the major problems of educational and manpower planning. It is possible to formulate targets of educational output and provide the necessary educational facilities for their fulfilment, but in a free society such as ours it is not possible to force people into taking those courses. And even when they do, their willingness to accept the jobs turns upon their preferences, which are determined by such considerations as salary, working conditions, status, and mobility. The provision of favourable conditions in these respects is beyond the purview of either the educational or the manpower planner. The marrying of educational output to employment opportunities depends not only upon the supply of the former but also upon their demand for the latter. This raises questions in manpower planning which have not yet received a systematic answer.

As regards the general categories of educational output – such as matriculates, intermediates, and graduates in subjects other than engineering, medicine and teacher training – the demand for such education dominates the problem of regulating the supply facilities by rational criteria. Given the primary-school enrolment, entry into higher levels of education seems a phenomenon that follows automatically. The fact of unemployment among the matriculates, intermediates and non-professional graduates does not induce people to subscribe to the proposition that school enrolment should be reduced – rather it further stirs political agitation for a faster pace of economic growth and a more employment-oriented economic development. There can in fact be no reduction in primary enrolment because of the constitutional directive and public demand for education.

The problem of unemployment among matriculates and intermediates is further aggravated by job dilution on the part of graduates who take on jobs which could well be undertaken by persons with inferior academic qualifications. The remedy for this situation is not to reduce the tempo of

educational expansion. It is to alter the content of education and the methods of teaching in order to increase the quality of employability or productive economic activity. Further, it is to induce a voluntary reduction in university and higher secondary enrolment by diversifying courses, imparting a work bias at the earlier stages of education, stepping up the input of science and technology in educational content and providing for terminalization and vocational or employment-oriented education at the post-primary and post-secondary stages. It is also important to go in for a vastly larger measure of non-formal instruction through both educational and productive establishments. Above all, it must be realized that a majority of those who go in for primary or even secondary education are not job-seekers but are self-employed. Educational planning, therefore, must be geared more to the inculcation of values, attitudes, behaviour patterns and general skills rather than be influenced solely or even largely by job specifications. Thus it is seen that the problem of linking educational output to employment is not just a question of manpower planning. It is, as I have implied already, much more a question of human-resource development geared to the economic and social development of the community. But it is easier to state this question than to propose a workable solution to it. I personally feel, for example, that India's institutional capabilities are not being fully used to mobilize manpower resources. Yet where does the remedy lie? Even if you are prepared to put the people under military discipline, you can't escape the economies of having to feed and clothe them. It is true that if a man can work in the village where he lives, if he eats nothing more and demands nothing more, then you can say that he represents a savings potential that can be utilized. The trouble is that the factors involved are not that fixed. The moment you try to give the man work, he demands payment. People are prepared to starve quietly on their own. They are not prepared to do so when given work, as I learned while doing a survey on the weaving industry. The weaver, working on his own, seemed reconciled to his very low wage and to his being more or less exploited. But he both wanted and demanded a higher wage when you said to him, 'come and work in a co-operative, or a company or corporation'. This psychological truth was overlooked by some economists of developed countries. They saw in the developing countries a great savings potential in the disguised unemployed, and hence urged their mobilization as a solution to economic problems. In India, we have in fact tried to mobilize manpower resources through what are called local-development schemes. Government money grants go to villages in order to buy construction materials for a road - on condition that the villages supply the labour. Similarly, if the villages are prepared to supply the labour needed to put up a school building, then the government will provide such things as the necessary engineering

guidance, technical assistance, and material. Through this line of approach, we can mobilize some resources in the rural areas. But mobilizing manpower resources, in the sense in which the expression is ordinarily used, poses a hard and complex question in a democratic society which has legislatures, law courts, a written constitution, a fairly active public opinion and a free press. How, in fact, do you design a policy for mobilizing manpower resources for economic development, and of a kind which has special economic advantages compared with the normal methods of using manpower for purposes of economic development? How do you get people to commit themselves personally to development programmes?

Let me draw a contrast. In 1962 when India was subjected to a Chinese attack or invasion – call it what you like – there was a spontaneous reaction by people from all over the country. They willingly worked much harder, silenced their quarrels and muted their demands. There was a sharp increase in taxes with hardly any grumbling, though in one year the tax increase amounted to 2 per cent of the national income. In contrast, when you try to raise taxes even by half a per cent for purposes of economic development, the response you get is much grumbling and much talk about how the capital market is being ruined. You are thus confronted with the problem of how to make economic development be as meaningful to the people as the defence of what they think is their national freedom.

I believe that this is really the major challenge facing the developing societies today, because we cannot have economic development on the scale that we want without accelerating public effort far beyond what would normally happen in terms of savings investment, hard work, social discipline and the like. The easy verbal solution offered is that you can get people to do more by giving them incentives. But incentives to whom? I have elsewhere said, and I here repeat, that incentives for the classes can mean disincentives for the masses. An incentive for the entrepreneur, for the big business man, for the big technician, for the big expert, can mean a great deal of disincentive for all the ranks below unless you are prepared to raise them all up.

In this connexion, I hear much talk about 'incentives' built into a policy of wage and salary controls. But I must again ask: what does this talk mean specifically? Such a policy must apply straight across the human spectrum in the private sector of the economy, and not just to the part comprised by the civil service in the public sector. Still, what are the implications of extending the given policy to the private sector? What happens to our constitution when this is done? What happens to the foreigner in our midst? Will he be willing to accept any differentials that are set, say, according to educational levels that are attained among people covered by the wages and salary policy?

A policy of wage and salary controls, with all that it implies, means a regi-

mented society. It means the control of millions going abroad. It means the control of foreigners coming to India. I am personally opposed to all such things. Yet, precisely because all such things follow logically from a policy of wage and salary controls, they remind us anew that when you discuss economics you must discuss political and social corollaries as well. There is the same connexion between a discussion of economics and of society at large, and their reflection in the educational system. Two views, one old and one of recent origin, are both wrong. The old view was that education had nothing to do with skills or with employment. The more recent view was that education was mainly an instrument for the production of skills. We are coming to the new view that education for a developing society means not only the creation of skills but also the creation of the kind of attitudes, incentives and motivations that can regenerate a society by effectively spurring the development of all of its human resources. Many difficulties, as I have indicated by the questions I posed above, stand in the way of bringing practice in line with the new view. Yet it is no less important for us to look at the educational system from that new point of view.

Unemployment among school leavers in an African city

This paper looks at one major African city and analyses the dimensions and characteristics of the employment problem of school leavers, a problem growing in intensity throughout much of tropical Africa.

With the introduction of free primary education in 1955, Western Nigeria was one of the first areas in tropical Africa to increase schooling facilities at a radical rate. Within five years the number of children in primary schools in the region doubled. But many of those who completed primary schooling were unable to get beginning jobs or further formal training. The unforeseen result of such rapid education expansion was to convert a state of youth underemployment in villages into a condition of youth open unemployment in the cities and towns.

Against this background, the paper presents the results of a sample survey taken in 1964 of households in representative sections of the city of Ibadan. The objective was to gain an insight into the employment, unemployment, and underemployment situation among school leavers in the context of general under-utilization of resources and of national pressure for development.

What was the present extent of unemployment in the city? How did school leavers fit into this picture? Who supported them while they searched for work? What were their living conditions? How realistic were they? To what extent were these school leavers mainly from families within the city, from the immediate rural areas, from distant villages and towns? What were the complexities of the employment market confronted by these youthful job-seekers? What was the part played by 'unofficial' educational institutions in the city?

The analysis, centred on such questions, concludes with a brief appraisal of the merits of widespread education in rural and urban areas – given the major lack of balance between the education process and the developing economy.

The city of Ibadan

Ibadan, Western Nigeria, with an estimated three-quarters of a million population, is the largest city in West Africa. Although in the older part of the city the traditional life of the Ibadan people centres around the palace of the Olubadan, sections have grown up inhabited by other Yorubas and by migrants from other parts of Nigeria. The periphery of the city contains buildings of contemporary architecture – residences, administrative and commercial buildings, a few large manufacturing units, and two university campuses.

The few modern manufacturing units have been set up for the most part with high amounts of government or foreign capital. They make use of the most advanced technologies and are operated by experienced managers with a skilled labour force; consequently, they have high productivity. In proportion to their high capital investment, however, they employ only a small number of workers.

In contrast, the indigenous crafts and small industries (over 5,000 separate productive units in the city) are characterized by low capital investment, relatively low productivity, and low money returns. But they are highly labour-intensive. They also provide training through the traditional apprenticeship system. In relation, thus, to the training and employment of the increasing number of school leavers, these small crafts and industries must be recognized as a dynamic factor in the economy.

Like other cities in Nigeria and in other developing countries, Ibadan has two distinct economies marked by a wide gap in income levels. The high-earnings economy comprises the professions (including government administration), the larger commercial firms, and the few modern industries; while the low-earnings economy includes the vast number of small trading units, petty transport enterprises, crafts and small industries.

In education, Ibadan has a wide range of institutions. Every morning during term some 50,000 boys and girls make their way along its winding streets to the 150 primary schools dotted throughout the city. Almost 4,000 pupils train at the twenty-five secondary modern schools, while another 5,000 study academic subjects in the sixteen secondary grammar schools. Over 2,500 students from all over Nigeria (and a few from foreign countries) take undergraduate and postgraduate courses at Nigeria's first university – the University of Ibadan. Nearly 700 more attend the Ibadan branch of the University of Ife. Teachers and nurses get instruction in the city's teacher-training colleges and hospitals. Ibadan also has a technical college, a co-operative college, and schools of agriculture and forestry.

This diversity extends to many types of 'unofficial' education: Koranic schools where mallams give religious instruction to young Moslems, private

'colleges' which give coaching in subjects for the General Certificate of Education, typing and shorthand institutions, radio and television repair workshops which offer technical courses, and sewing centres for training young seamstresses. No one knows how many lights burn at night for those who study alone, tackling correspondence courses in a wide variety of subjects in order to achieve further qualifications. Such intense eagerness for education reflects the keen desire among youths to find their places in the modern economy.

Free primary education in Western Nigeria

In Ibadan, the period in the early 1950s leading to regional self-government was one of great hopes. The high price of cocoa plus the accumulated reserves in the marketing board funds placed the possibility of intense economic development on the horizon. Political optimism combined with the belief in a rising rate of economic growth formed the background for a great surge of vitality among the educated men and women. A feeling of tremendous urgency in stepping up education as an instrument for economic and social change prompted the newly elected leaders to move ahead with a bold design.

In January 1955, free primary education was launched throughout Western Nigeria. Some 380,000 six-year-olds entered school for the first time. As it happened, this was more than twice the number that had been estimated on the basis of the 1952 census. The total enrolment in the region's primary schools in 1955 thus rose to 812,000, an increase of over 360,000 from the previous year. An immense mobilization of resources had taken place: sites for new schools had been secured, often with difficulty; nearly 3,500 new schools had been opened, the division of schools between voluntary agencies and local authorities having been arranged with a minimum of friction; over 12,000 new class-rooms had been built and furnished, either as extensions to existing schools or in entirely new schools.

After this first lively year, the enrolment in primary I dropped considerably. The high figure of the initial year was believed to have been caused by the enrolment of children both over seven and under six years of age (in the absence of birth certificates). The next years, however, showed the steady rise expected in relation to population increase. By 1960, when all school-age children were involved in the new system, the numbers in primary schools in the region reached well over a million (1,124,000) – more than double the 1954 total.

At the same time as free primary education was started, 180 secondary

modern schools were opened throughout the region to provide an additional three-year course for those unable to go on to grammar schools either because they lacked finances for the higher fees or because they could not pass the entrance examinations. This course was designed in two parts – academic and practical – but because of lack of suitably trained staff and of necessary equipment, few of these modern schools have been able to offer any solid vocational training. The number of these schools rose by 1960 to over 530 with an enrolment of 75,000 students and by 1963 to 700 schools with 110,000 students. Although the government provided building grants for publicly owned secondary modern schools, these schools are otherwise self-supporting, with teachers' salaries and maintenance costs coming from the fees paid. Many of these schools are under private ownership and a wide variation in academic standards prevails.

Such rapid development of education facilities led to new strains on government and new stresses on individual families. Because of the underlying belief that the economy of the region would continue to flourish, financial difficulties were not clearly foreseen. The costs of the expansion of primary education were carried largely as a direct charge on government budgets through grants-in-aid for both capital and recurrent items – for class-rooms, equipment, and teachers' salaries. To some extent, this became a substitute for the component of community self-help previously encouraged through mission and other local leadership. Thus, over-all public recurrent expenditure on education by the regional government rose to absorb over 40 per cent of the annual budget (with over two-thirds of this for primary education). This has decreased the possibilities of public expenditure for other forms of development which could provide employment for the rising numbers of school leavers.

Other problems have become pronounced as a result of the introduction of free primary education. With the vast numbers of untrained teachers, the shortening of the primary course from eight years to six, and automatic promotion (except for a few in each class), an inevitable fall in standards has taken place. Concerned about complaints that the new education is now being compared with the old standard VI certificate, the government is now placing much emphasis on teacher training by improving regular training-college programmes and by offering special vacation courses in English and other subjects.

The most serious problem, however, is unemployment among school leavers. Many of the young men and women who attend schools in villages reject the traditional occupations of their parents and hopefully migrate to the cities in search of wage-paid jobs. But the economy is not growing at a rate high enough to provide beginning jobs for more than a small proportion of them. Ibadan – a political, administrative, and commercial centre –

attracts many migrant school leavers who remain unemployed. Many of Ibadan's own sons are without jobs.

Unemployed school leavers

To discover the details about the unemployment among school leavers, a sample survey of households in three representative sections of Ibadan was undertaken in October 1964. Interviews were conducted with the heads of every tenth household in these areas. The objective was to gain an insight into the composition of the labour force as a whole and to view the unemployment among school leavers against the background of economic activity and inactivity. The survey thus explored not only the occupation and employment of members of the household (all men and women from age 14 to retirement) but also the intensity of employment (over the working day, the working year, the working life) in order to derive a meaning for under-employment and for the rural-urban relationships of each household.

The survey covered three selected areas in Ibadan: Agugu, Orita-Merin, Ekotedo. (These were sections 24, 2, and 18 respectively, among the thirty sections of a specially constructed research map of the city.)

Agugu – together with Oke-Ofa, Ode-Aje, and Oje – represents 'traditional Ibadan', the activities of whose people are largely unaffected by modern influences. This area, with the exception of Oje which has some families from other parts of Yorubaland, is inhabited almost exclusively by Ibadan people who maintain a close identity with rural areas surrounding the city. Many families have farming interests. The area has a sprinkling of craft industries, but no large business enterprises. Major markets include Agugu, a daily market distributing farm produce brought in from the countryside, and Oje, the cloth market which brings traders from weaving areas as far away as Iseyin and Ilorin, alternating on an eight-day cycle with a smaller market.

Orita-Merin, including Alekuso, has a population with origins in Ibadan and other Yoruba towns as well – Ijebu-Ode, Abeokuta, Oyo, Ilesha. Here there are craft enterprises, such as blacksmith shops and weaving, and a few trading concerns with permanent premises. But Orita-Merin is known mainly as a major food-distribution centre: yams and yam flour, cassava and gari, beans, peppers, and so on. Women's occupations are tied in with food preparation and trading in farm products from the three near-by markets of Ayeye, Oja-Oba and Gege. Men are mainly self-employed or small wage-earners in various occupations; there are a few junior civil servants.

Ekotedo, which includes Adamasingba, is a newer part of the city where not only Ibadan and other Yoruba families live, but also migrant families from the Mid-West, the East, and the lower provinces of the North. Many different ethnic groups are represented. Here there are more street-side workshops for photographers, tailors, mechanics, furniture-makers and retail shops of various descriptions. Here also live a higher proportion of steady wage-earners.

For the purposes of this survey, a household is defined as a family unit which habitually shares a common food preparation. Such households are found in traditional, semi-modern, and modern compounds – classified architecturally. The definition of an unemployed man is a male over the age of 14 who is not continuing his education full-time, who is neither incapacitated nor elderly (over an approximate 60 years of age), and whose earned income during the previous nine months was insufficient to meet personal (not family) imputed food costs. A single girl is also considered unemployed on this definition, but no married woman is viewed as unemployed unless she has professional qualifications by examination – such as nurse, teacher or stenographer. Apprentices to indigenous traders, artisans or craftsmen are classified as employed if a formal understanding, verbal or written, exists between master and apprentice (or between business woman and girl apprentice). Although regarded as employed, these apprentices often receive less money and other returns for their work than is required to cover their food costs – if, indeed, there is any money payment at all.

Taking the three areas of the city together, the heads of 686 households were interviewed. Of these households, 566 are in traditional-style compounds, 32 in semi-modern compounds, and 88 in buildings of more-or-less modern design and construction. These households make up a total population of 4,450, i.e., an average household-size of six persons – approximately the same for each of the three areas.

The number of persons per room averages four : Agugu with over six, Orita-Merin with four, Ekotedo with somewhat over two. The average monthly rent per room, in situations where rent is paid, is around 12s. 6d. for Agugu and Orita-Merin and £1 5s. for Ekotedo, where more buildings are of modern design and more households have electricity and pipe-borne water inside the compound.

Of this total population in households visited, some 46 per cent (2,047) are below the age of 14. From the remaining 54 per cent (2,403) are subtracted those in full-time attendance at secondary-modern and grammar schools and other post-primary educational institutions. Also subtracted are those either disabled or too elderly for persistent economic effort (those beyond an approximate age of 60 – although, in fact, such elderly people are often found to be involved in petty trading, small craft industries, or farming).

This leaves some 2,100 – or 47 per cent of the population in the households visited – within the labour force. These are the men and women with the potential for being ‘economically active’ and whose efforts should be meaningful for national economic development, whether in transport, market, workshop, farm, office or building site.

This number shows a small majority of men over women, especially so in Agugu and Orita-Merin areas, a majority that would have been more pronounced but for care taken during the survey to discover where women (including those temporarily absent at family farms in villages some miles from the city) spend most of the year. In cases where most of their time is centred in the city household, women are included as part of that household. Again, young men in the labour force are somewhat greater in number than young women, reflecting in particular the heavier migration of male school leavers to the city.

Of the female labour force, a small number of young women are wage-earners. They work in pools’ offices or as salesgirls in trading establishments; a few have factory jobs; some are teachers and nurses. Many have some form of apprentice attachment to women traders and seamstresses. The rest are mainly married women who, while caring for their children, engage in petty trading such as selling onions in local markets, bread along the streets, or matches and soap powders in their own compounds.

Some 15 per cent of the female labour force are unemployed. (Married women are not counted as unemployed unless they possess special qualifications and have no work.) Almost all of these unemployed young women have attended primary schools; some have attended secondary modern schools as well. The general complaint is that there are no jobs for them. Nor do they find it easy to gain apprenticeships. A substantial number of these unemployed (some two-fifths) are taking further training on a part-time basis in unrecognized institutions such as typing schools or dressmaking classes. Almost half of these unemployed young women have attended schools in Ibadan city; over one-quarter come from outer Ibadan (within the province); and the balance have migrated mainly from other Yoruba villages and towns. A few have come from Mid-Western and Eastern Nigeria and the southern provinces of Northern Nigeria.

Of the male labour force, nearly three-quarters have some form of employment. Taking the three areas together, about one-fifth of those employed are wage-earners with jobs of varying degrees of permanence and income: clerks, local government police, male nurses, artisans, labourers. Three-fifths are self-employed as traders, tailors, herbalists, petty building contractors or suppliers, blacksmiths, farmers. (While Agugu has 70 men whose predominant occupation is farming, Orita-Merin has 13 and Ekotedo none.) The remaining one-fifth (over 200) are employed as apprentices to indigenous

traders, mechanics, blacksmiths and artisans of all kinds. By far the majority of these apprentices are school leavers.

Over one-quarter (28 per cent) of the total male labour force in the households visited is unemployed. That is, they have not earned sufficient during the previous nine months to cover personal food costs – so far as this fact can be established from close inquiry about sources of income and support. Of these male unemployed, three-quarters (78 per cent) are school leavers. All of these unemployed school leavers have completed or nearly completed their primary schooling; many have finished the secondary modern course of three years; three are withdrawals from secondary grammar schools; two have earned West African school certificates, two have passed through trade schools. Several are married and are being supported by relatives with help from wives' earnings.

The median age of these unemployed school leavers is 19. Some 53 per cent are under 20 years of age; 35 per cent are between 21 and 25; the rest are over 25. The distribution between ages 15 and 25 is fairly even. How long have these school leavers been unemployed? Some 35 per cent have been seeking work in the city for less than one year; 21 per cent for between one and two years, 26 per cent for between two and three years, and 13 per cent for more than three years. A comparison of dates of leaving school and of arriving in Ibadan shows that, particularly with those coming from outside the province, there is often a delay of a year, or even several years, before migrating.

What working experience have these unemployed school leavers had? Fifty-eight per cent have never had a job; 26 per cent could prove they have worked once; while the remainder have held more than one job. Of those who have never worked, nearly half are under the age of 20. Those who have held jobs once, twice, or even more – for varying stretches of time – express feelings of living in an uncertain job world. This is an important factor in interpreting the meaning of unemployment: the continuous threat that even when a job is obtained, it may not last long. Obviously where there is an abundant supply of 'applicants', the threat of dismissal helps to discipline those employed, but it also creates a climate of insecurity.

Many of the more mature unemployed school leavers are those who have held apprenticeships with indigenous masters, some holding government trade-test certificates as well as 'diplomas' from their former masters. But after completing their apprentice training, they have been unable to start work on their own or to get jobs (perhaps as artisans) and so earn enough money to pay their food costs. A few of the unemployed claim to have had on-the-job training with larger firms.

The generalization can thus be made that the widespread unemployment in Ibadan centres on young men and women who – because they have

completed from six to nine years of schooling – have heightened expectations about their future. There is no valid reason why these youths so classified as unemployed should be characterized as underemployed persons. Some may do a few chores in the households where they are living; they may help younger relatives with homework when they return from school. A few from the Ibadan area make occasional journeys to family farms, but there is no evidence that they are taking a purposeful part in farm operations. They go to the employment exchange, and they visit employed members of their families to get tips on job possibilities. They are actively seeking work with all means at their disposal. These young people could be said, of course, to be in a period of transition – the period between leaving school and taking up adult responsibilities. But what are the psychological results of several years of rejection by the employment market? What are their future prospects? This group is new on the political horizon. These young people have come to their maturity in an independent Nigeria, and they look to the government for hopeful signs of new industries or new projects for modern agriculture. They read the daily newspapers and are highly conscious of the changing political scene.

These school leavers were asked, 'Why do you have difficulty in getting a job?' Some of the replies were: 'because many job-seekers come from other regions to look for jobs in the big towns'; 'because of my education and qualification'; 'there is nobody to help me'; 'my luck has not yet shined.' They were also asked, 'How do you think more jobs could be provided?' They invariably mentioned the government: 'expect government to open more trade centres'; 'government should open more factories and farm settlements for new school leavers'; 'only government knows what to do to avert the situation.'

School leavers are realistic enough in assessing their own personal economic situations, but understandably less so in appraising the regional or national economic scene. The government is at the centre of the drama, and school leavers call for action – sometimes in partisan political terms.

The drive for self-improvement

Forty per cent of these male unemployed school leavers are taking some kind of further education either in unofficial training institutions or by correspondence. The most popular is learning typing. For one hour a day each week-day there is a charge of 5s. or 6s. a month; for two hours a day, 10s. or 12s. a month and so on. This training of one hour a day enables the young unemployed school leaver – if he is a migrant – to validate his continued stay

in the city not only for his parents back in his home village but also with the relatives who give him food and shelter. The R S A (Royal Society of Arts) examinations held regularly each six months always attract a massive turnout of young aspiring men and women hoping to win the certificate that might help to gain a job.

In Ibadan there are no less than 327 typing institutions, some with only two or three typewriters, some with as many as twenty. Because so many of the unemployed school leavers attend these 'schools', a 10 per cent sample design was worked out and 32 proprietors were interviewed. These typing schools have been started in recent years by civil servants, by clerks to big firms, a few by school teachers, and a few by enterprising school leavers who themselves have had training in the same system. These schools draw in not only those without jobs, but also those with some kind of work who want to improve their prospects. Some take clients only in the afternoons and evenings when the proprietor himself is present to give the coaching. Many operate all day with typewriters clattering from early morning to late at night and echelons of pupils coming and going at the end of each hour. A senior pupil may supervise the trainees during the owner's absence during the day; in return he will have his fees waived and perhaps earn other compensation as well.

Other skills can also be learned part-time from qualified tutors: draughtsmanship, radio and television engineering, and sign-writing, for example. Fees are well established: for example, 'radio and TV engineering' for two to two and a half hours each week-day costs £1 5s. a month. Most artisan skills can be learned part-time from a master or journeyman by special arrangement, with fees set by a competitive market.

There is little difficulty in distinguishing between the various kinds of indigenous apprenticeships and the workings of these private schools where skills are taught. All require a fee to be paid, but the difference depends on the time spent per day as well as the nature of the daily experience. Regular coaching for the General Certificate of Education or typing and shorthand training – these provide instruction for only an hour or two a day for each trainee, with fees paid monthly. Apprenticeship is a long-term arrangement (whether a written contract or not) in which the trainee surrenders his labour for a period of from two to five years and learns by spending his whole day on the job. Often he pays an annual fee to the master, and at some point he may receive wages or food and shelter from the master.

The pressure by so many unemployed school leavers for self-improvement through these non-recognized institutions emphasizes the inequality of opportunity for education at higher levels – in secondary-grammar schools and technical institutions. Such opportunity depends on the ability of parents and relatives to pay high fees over a period of up to five years.

The dynamics of migration

Some 15 per cent of all unemployed male school leavers in the households visited have come to Ibadan from Mid-Western and Eastern Nigeria; most of these live in Ekotedo.¹ Some 35 per cent have migrated from villages and towns in Western Nigeria: for example, from Abeokuta, Ogbomosho, Ijebu-Ode, Ondo. The remaining half have their origins in Ibadan or its surrounding area. They have received their primary and secondary-modern schooling either within the city itself or in villages and townships in Ibadan province.

The reasons for these migrations to the city are mainly economic: school leavers are moving towards what seems to them a better opportunity. Three-quarters of all school leavers who catch a lorry to the city in search of work have fathers who are predominantly farmers.

Lines of migration from village to city have gradually become established. Some years ago, for example, a school leaver arrived in Ibadan and was able during a period of commercial expansion to get work and set up a home. Then some of his relatives followed, using his rooms for a base, until they too found the means for a livelihood. They in turn granted hospitality to more young job-seekers from the same village. But now the situation has become acute: more and more school leavers are coming to the city and very few jobs are available.

This family system, based as it is on reciprocal obligations, eases the transition from the village for the school leaver. But it places a heavy burden on the relative, who may be earning only £10 a month to support himself and his wife and children. He may live in only one or two rooms and in some cases the school leaver may have to sleep in the corridor outside. Budget studies in Ibadan show that minimum costs of food for one youth range from £1 10s. to £2 a month (with the lower cost for Ibadan youth who consume food from family farms). If this is subtracted from the

¹ Three further areas within the city – Elekuro, Inalende, Mokola (without Sabo), being sections 28, 4 and 1 respectively of the research map – were surveyed in the same way as the former three with somewhat similar over-all results. The principal difference is in Mokola, where a high proportion of migrants from other regions live. Of these unemployed school leavers, 50 per cent received part or all of their education in Eastern Nigeria, 13 per cent in Mid-Western Nigeria, 5 per cent in the southern provinces of Northern Nigeria, 20 per cent in Western Nigeria other than Ibadan province, 7 per cent in Ibadan city and districts, the remaining 5 per cent in schools elsewhere in Ibadan province

monthly pay of the relative for a period of a year or more, it is easy to understand why the school leaver may become less welcome. He may then go to another relative or he may travel to another city to try his luck.

Taking the country as a whole, the proportion of school leavers who migrate from any particular area depends on the level of farm income, the availability of fertile land, and the date of the spread of education. At *one extreme* are areas where there is heavy population pressure against *limited land and* where education has been introduced at an early date; here 90 per cent or more of the school leavers will follow the already marked lines of migration to the cities. Youths from such a background show tremendous persistence in finding jobs even as general labourers. For them there is no alternative: they cannot make a living by returning to the family farm. At the opposite extreme are those areas with plentiful fertile land and a relatively late diffusion of education; under these conditions, many school leavers remain on the farm because there are opportunities at hand and because there are usually few, if any, relatives with footholds in the cities. Between these two extremes are many villages and minor towns from which a varying proportion of school leavers migrate to seek their fortunes.

These school-leaver migrants often maintain close ties with their home villages. Even at a long distance and over a long period of time, they usually retain their share of land – no matter how small or fragmented – handed down through hereditary processes. A person who is successful in his career in the city generally builds a house in his village for his retirement and, in the meantime, for the use of his relatives. He may contribute to the development of the village through clan unions or improvement associations.

Here some distinction should be made between the long-range migration of school leavers coming in from many parts of the country and the perpetual movement that takes place between Ibadan and its outlying rural areas. Especially in the older parts of the city (Agugu, Aperin, Aremo, Eleta, for example), families are tied in with the production and marketing processes of surrounding farms. Farmers live within the city and travel out to their farms, distances anywhere from a mile or so up to fifteen or even twenty miles away. Some of these, of course, exercise absentee-management and attend the farms only at peak seasons of the labour year. At the same time, other members of the family may spend most or all of the year in the village near the farm land. Women members of such households usually help with the production of minor food crops and with the marketing – bringing a wide variety of items by head portage to the city markets. They carry wood and charcoal for fuel, clay pots for water storage, palm wine in calabashes, vegetables and fruit and other products from the farm.

In these more traditional sections of the city, there is always a great deal of coming and going between the family compounds in Ibadan and the

family compounds in the villages. For Christian or Moslem holidays, naming ceremonies, or wedding festivities, the whole family may gather together in the city. Other traditional celebrations take place in the village and then the trek moves in the opposite direction.

When young men and women complete their years in the village schools in the wide area surrounding Ibadan, they usually move to the city to go on with secondary education or to look for jobs. During July 1963 the headmasters of 25 of the 38 primary schools in the south-east Ibadan district council area were visited. From school rolls it was established that 3,860 pupils had passed through the primary 6 class in the previous three years (2,660 boys, 1,200 girls). Estimates were made that some 940 of these were now full-time students (390 at secondary grammar schools, 550 at secondary modern) mainly in Ibadan city. A few of those unable to continue their education remained on the farm or took up apprenticeships locally, but most of the school leavers came to the city to search for work. For these young people, there is relatively little permanent movement back to the village. They do not want to commit themselves to the peasant agriculture of their fathers.

The employment market: expectations and reality

In the city of Ibadan, there are at least 20,000 young men who have completed six to nine years or more of formal schooling but are uncommitted to productive work of any kind.¹ Within the definition used in the survey, they are unemployed school leavers. Some of these will move away from the city back to their home villages or townships; a few will pass on to stay with relatives in other cities; but the majority will remain and persevere in their search for work. As each year passes, more school leavers arrive in the city and the backlog of unemployed youth grows. By the nature of its disciplines, modern basic education creates a break with traditional life and occupations. Traditional education provided for

¹ Taking the three sections that were explored in the survey (which covered, on a 10 per cent sample design, a total population of 44,500) as representative of the thirty sections of Ibadan, then an estimate of unemployed males in the city's labour force is 30,000. Three-quarters of these can be assumed to be unemployed school leavers. A substantial number of the remaining one-quarter are youths with less than full primary 6 schooling or with no schooling at all

the continuity of culture and the maintenance of a relatively unchanging way of life. Modern education opens minds to the forces of progress. Some years ago, when only a few completed primary schooling, they were able to get jobs in the modern economy. But now, with the large numbers who pass through primary 6 and secondary modern school, they find themselves in that confused area between the rejection of the old occupations and the finding of new patterns of making a living. Their horizons have been widened, their expectations raised. These expectations are for personal and family gain and, to a certain extent, for higher status. They are consistent, nevertheless, with the driving force required to diversify and to develop further the Nigerian economy.

How realistic are these unemployed school leavers? Their willingness to revise downwards their ideas about the kinds of jobs they will take is directly related to the level of family income. It is these alternative earnings (opportunity cost) that must be examined in order to explain the behaviour of jobless youth in the city. If the school leaver comes from an area where there is definite population pressure against available land and where he is surplus to the family's farm enterprise, he will very likely take any job, no matter how menial, to keep going. And he will continue to hope and to search for something better.

How does competition among these applicants express itself in the employment market? First, there is the official employment exchange where some applicants re-register each week. Next, there are the unofficial employment markets – the queues that form, for example, behind Mapo Hall, where contractors' trucks swoop in the haze of the early morning to select daily-paid labourers. The work might be to headpan earth at a building site; rates of pay range from 2s. 6d. to 4s. a day. Or these school leavers may group outside the gates of a commercial firm which hires daily general labour. In these cases, school leavers who are physically strong compete for jobs on the same basis as adult men and women. And last, there is the network of family relationships where help comes through the individual initiative of a relative or through the collective effort of a family meeting or clan union. 'Finding the price of a job' is a familiar, however unpleasant, aspect of the job lottery. Any apparent advantage that school leavers with their origins in Ibadan may have in competing on the city's labour markets is offset by the intensity with which these migrant family enclaves seek job openings for 'their members.'

What are the signs of the tightening job market? Higher qualifications demanded of applicants (police, retail firms, banks and so on); the lengthening time spent between leaving school and finding work; rising numbers of applications for wage-paid jobs; former teachers (untrained) now without work; former apprentices now jobless; the pressure to improve skills in

the many unofficial educational institutions of the city. The indications for the next few years are becoming clear. Among university graduates, competition for key positions will be intense and many will have to take less-preferred jobs such as teaching in isolated rural areas. Promotions will be tediously slow. Secondary-grammar-school leavers will need to adjust their hopes accordingly; employment opportunities for them in the modern economy will be scarce. Finally, secondary-modern and primary-school leavers will have even less chance than at present for wage-paid work.

Investment in basic education

Given the fact that unemployment among school leavers is so widespread in Ibadan – as in all cities and towns in Nigeria – was the decision in the 1950s to provide free primary education desirable? What social and economic returns can be expected from such heavy investment in basic education? The signal achievement of free primary education has been in the big strides taken toward creating equality of opportunity at the beginning education level for all children in the region regardless of family income or remoteness of village. It could be argued, of course, that this primary education is neither free nor universal. Parents still must pay from £2 to £10 a year for each child to cover costs of uniforms, books and such incidental expenses as collections for a school harvest festival. And in most areas, a varying proportion of children do not attend school. But the programme did cut the direct costs to parents and did provide education facilities in areas which had previously been missed in the patchy expansion of earlier years. Apart from the political motives that sparked the scheme, there was the belief that exposure of young people to modern schooling would raise the quality of the future labour force. Already some evidence has accumulated to show that primary education does raise productivity in the markets and workshops, in transport, on building sites, and even on farms. Many proprietors of small enterprises prefer school leavers to those who have not attended school at all: tailors and carpenters want apprentices who can make accurate measurements and keep rudimentary accounts; traders need assistants who can keep records and calculate. The position with farming is also becoming more clear: given opportunities, selected and willing school leavers are likely to be more ready to innovate new crops and to try new methods. Another benefit of high proportions of school-age children attending school is the resulting greater mobility of labour; this competition for available jobs can be a spur to the economy, provided of course that procedures for selecting merit are given a chance to work.

When the plan for free primary education was proposed, what was not sufficiently predicted was the effect of primary education in creating youth open unemployment in the cities and towns. The normal flow of rural migrants to the cities has been multiplied many times. Again, the commitment of such high public costs for primary education in relation to the total budget was not fully anticipated. With such large allocations to primary education, these finances have not been available for enlarging other parts of the education system – such as secondary grammar and technical colleges – or for expanding other parts of the economy.

Any long-term appraisal of the benefits and disadvantages of a widely based education system will depend largely on policies worked out now – policies for reducing the burden of financing primary education, for improving the quality of teaching in conjunction with curriculum reform, for balancing rural and urban development, and for providing jobs for school leavers consistent with the needs of the growing economy.

Colloquy

The foregoing three papers dealt with employment opportunities and their implications for educational planning, and the Chairman opened the discussion of these topics by connecting the papers with a set of questions posed in the opening phase of the symposium.

He observed that, on the basis of the remarks thus far made, it appeared that selective manpower shortages still threatened to slow down national development. At the same time, there were surpluses of both educated and uneducated manpower. The surplus labour problem arose, it seemed, partly from population increases, and partly from the failure of economic development efforts to create enough jobs – especially in non-urban areas. How, then, should educational planners respond to these circumstances?

Specifically, to what extent was education responsible for unemployment? Did education actually create unemployment? Would educational measures to break manpower bottle-necks indirectly create more jobs over-all? What was the case for and against slowing down educational expansion? Would a slow-down really help the employment problem? Or was a reorientation of the educational effort the real need? If so, in what direction?

JOLLY Three main themes emerge from the papers bearing on employment and unemployment and their implications for educational planning. Probably the strongest theme was the emphasis on rural development, which dominated the papers by Hunter and Dumont [see pages 161 and 181] and formed a part of Harbison's. The second deals with a series of what might be called macro-employment issues, such as wage policy, the use of intermediate technologies, and so on. Thirdly, there is the theme of Callaway's Nigerian case study, of an educational expansion that exceeded all employment opportunities, and the moral of this for educational policy.

With regard to all three themes, Arthur Lewis has shown how the whole emphasis in understanding the problems of developing countries has shifted since the fifties.¹ Originally, there was a

¹ W. Arthur Lewis, *American economic review*, 1965

preoccupation with the need for capital and for an increase in the rate of savings, but experience has shown that capital formation was often not the bottle-neck to growth. Nor has the lack of formal skills been as great a deterrent as was formerly believed. Professor Lewis suggested, firstly, that the scarce factor limiting growth has been the lack of economic initiative and enterprise. Secondly, he stressed that employment opportunities have grown so slowly that unemployment poses major problems that were greatly understated in earlier analyses of development.

Another general point to bear in mind in considering these themes is that we are not dealing with static economies. There are long-run fluctuations and there are often large short-run fluctuations which can greatly alter the initial assumptions underlying particular plans and policies. It was clear from Callaway's paper, for example, that Nigeria's early start in primary expansion was encouraged by the availability of large cocoa revenues at the time. We must not forget that the development plans of the majority of the developing countries depend heavily on the prices of their few exports in the world markets – that they are subject to enormous fluctuations in export earnings and, hence, in the foreign exchange they need to sustain development.

So much by way of general remarks. The more specific points I'd like to consider now touch mainly on the question of intermediate technologies and wage policy. Much has been written on the question of shifting the choice of technologies in developing countries so as to make more use of unskilled labour and less of foreign exchange and imports of capital machinery. In practice, the range of choice is often limited by technical and organizational considerations. We need more case studies here to learn exactly what has been or can be achieved under various circumstances. I hope that the representative from the ILO may be able to shed more light on this matter.

A second difficulty is that, although intermediate technologies use or purport to use less physical capital, often they actually use more scarce human capital (which may be at least as short in supply as physical capital) for the purpose of organizing the unskilled labour. This certainly appears to be one of the practical difficulties of introducing more labour-intensive techniques, for example, in road-building and other public works, where the labour force must be adequately organized and supervised to achieve moderate standards of efficiency.

I should like to turn to the implications for educational policy which Callaway has mentioned in his paper and which Skorov too has touched on. Callaway's paper gave us a great deal of detail about the well-known example of Western Nigeria,

JOLLY
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where universal primary education was established, costs escalated and the unemployed school-leaver problem became very serious. I was pleased by the moderate and appropriate conclusions he drew from the facts. For, in my own view, it is dangerous to assume that, because of present difficulties over the unemployed primary-school leavers, primary education should not be expanded any further. We are playing with enormous issues at this point and we should be sure of our ground before a decision is made from one point of view that has implications for many other points of view, not merely of an economic but of a social and political character.

Another reason for being cautious about cutting back on educational facilities appears in Callaway's observation that there is some evidence that primary education does add to productivity – certainly among people who have jobs already. This may also be true of people in the rural areas who do not have wage-earning occupations – provided one could bring about a change in their attitudes. But here again greater research is needed.

A third reason for being cautious about a cut-back on educational facilities is that an expansion in the number of people with ambitions and expectations may provide the political force necessary to bring about the basic economic changes which are needed to expand greatly the number of jobs.

If we move precipitously to curtail all forms of primary education, as distinct from revising existing primary education, we are taking decisions and adopting attitudes with very, very long-run implications. We heard yesterday that there has been a shift of opinions among manpower planners in the five or so years in which the science has burgeoned. In contrast, the projections we've been making are often for twenty years. And the countries that have suffered under these projections will have to live with the results of these projections for another fifteen years. Meanwhile, after the first five, we may have changed our minds again! Normally it takes a country fifty years to educate its whole population through primary schools out of illiteracy into literacy. I think we want to be careful before we say, on the basis of five years' experience, that everything done so far is a mistake.

RAO

The concepts now coming into vogue among economists were Gandhi's ideas fifty years ago in all their economic, political, social and cultural dimensions. Gandhi said that you could not find employment by mechanizing the economy. A mechanization of the economy would increase production but would lead to unemployment. Hence, the alternative was to go in for village industries. Economists are now subscribing to Gandhi's views. In every planning document everyone talks about intermediate

technology, but no one can say what it is. Further, many stark human realities often preclude good theoretical solutions to economic problems. It is all very well, for example, to talk about a labour-intensive approach to economic development. But I doubt whether it would work without an authoritarian type of discipline. It has worked so far only in one-party states.

Another point. Do we stop education because a number of people are unemployed? The increase in employment is a function of economic development, just as the object of employment opportunities is to expand economic development. The educational system we in India inherited did not give us greater employability. We must, therefore, look at the educational system at all levels. We must ask: How does it promote employability, thrift, investment, preparedness to accept social change? How does it promote the growth of a scientific and technological climate, or of ideas about regulating the size of the family? If education does not 'do any of these things, then we must look at it not as an investment but as something that belongs in another field, like religion.

I do not agree that education is unrelated to economic development. I believe we must keep education within the economic house. The question is, how do we do it? How can we give education an economic orientation at the primary level? At present, in the rural areas, it fosters the kind of discontent that makes people want to leave the land. But how can we develop attitudes, values and modes of behaviour oriented not only toward paid jobs but toward self-employment, toward making people better farmers? The questions state the need for research on how to make primary education development-oriented. What kind of guidelines can we give to educational planners who must choose between slowing down or halting the rate of expansion of educational facilities and redeploying educational resources in the face of unemployment?

HARBISON

I wish to make clear that I favour a continuation and not a cut-back of investments in education. In many of the developing countries, education is the largest industry. In Nigeria, for example, it employs 120,000 people – which is more than all other employees in the modern sector. Secondly, education is one of the most labour-intensive industries, and it becomes even more labour-intensive as it modernizes. Let us not try to solve unemployment by cutting back on the largest industry. Education should be looked upon as something promoting development. For too many people it is an escape route to idleness, or a ticket into the privileged class. I agree that, in so far as possible, we must eliminate degrees as a prerequisite for jobs, and must instead make personal qualifications the basis. In

HARBISON
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Nigeria, for example, a craftsman may not be employable if he has a certificate or degree – since his price is too high. An employer would rather take a different person and train him on the job. If you eliminated degrees, you could more readily relate educational qualifications to employment opportunities.

Why should newly developing countries cling to an obsolete colonial heritage in their educational system and wage structure? These things made sense in colonial times, but no longer do under present conditions. The worst kind of tribalism is not in the village and in the tabu. It is in the inherited tribalism taken over from the colonial administration and perpetuated by the new country. The educational system will adjust to the needs of the developing countries if they can get away from inherited Western standards.

MWINGIRA

I want to say a few words in response to the question Harbison asked about why we, in the independent developing countries, still cling to the colonial system of education.

Education, like many other amenities of life, is a new thing to developing countries. The system itself has got to be developed and we have borrowed quite a lot from the developed countries. We have borrowed techniques of teaching. We are continuously borrowing teachers. In Tanzania, for instance, we have had teachers from varying countries of Europe, Asia and America. Those teachers come with fixed ideas of their own as to how to develop a child. They come as missionaries. They come as volunteers. In the face of the fixed ideas they bring with them, we have not quite developed a body of thinkers or educators from among ourselves who can guide the educational system within the country.

We are, ourselves, the products of one or another system of education. For us to think differently and orient our country's educational system in a different manner from what we, ourselves, have been brought up to believe requires a great effort. It requires a great effort of mind for someone to look at the educational system through different eyes altogether and to say: 'I think that our education should be moulded in ways that differ from where.' To make such a change requires the support of the teachers or teaching force in a developing country and this support is not always forthcoming.

I will cite an instance. I served as a headmaster of a secondary school for three years. The staff of twelve members represented eight nationalities, and it was not an easy task to make them comply with the syllabus of the Cambridge University school certificate. I went round sometimes and sat at the back of the classes and listened to some of the teachers teaching. Some of

them would say to the students: 'Now look, this is an English system of education. It won't do any good to Tanzania. I will tell you what we have done back home. Forget about examinations. Forget about Cambridge school certificate. Why should you Tanzanians stick to this Cambridge school certificate? I'm going to teach you for the sake of getting knowledge - knowledge that is going to be useful to you in life.'

But the Tanzanian child has got to come out and join the labour force where he will fit into a certain category of manpower with a fixed salary schedule in accordance with what he has achieved at school, judged by his performance on the examinations. That child is not going to take to heart the advice given him by the teacher who is opposed to the Cambridge certificate.

It is not that we want to cling to the old colonial educational system. In fact, the education is not colonial in the sense that we have imported an alien system of education. The colonial people developed an educational system that suited the administration within our country. It is, in a sense, native to the country.

It is true that we in Tanzania still take the Cambridge school certificate examination [but] I am told that it is no longer taken in England - that it has been found to be unrealistic and obsolete to the situation there. In Tanzania, we find it is still useful - for want of something better to guide our measurement of a student's performance. We are striving to develop our own system, but it will take time. Give us time, and something will come out of it.

On the question of degrees and diplomas as standards of educational achievements there is the matter of trying to get international recognition. When we get scholarships to send students abroad, they have got to be measured in terms of their performance within the educational system of the country they go to before they are accepted. What are they equivalent to? A school certificate or higher school certificate, or a General Certificate of Education level? If you wipe away these measures of performance, you have no criteria for selecting these students for further studies in institutions of higher learning either within the country or abroad.

There is another factor that comes into play. It is the professional satisfaction associated with membership in certain institutes. I was talking to a friend of mine, a doctor, who graduated from the University of East Africa, went abroad for further studies and came back as a Fellow of the Royal Society of Scientists - a membership which gives him certain privileges. When he returned home, he was told to teach at a medical school that trains medical practitioners of a lower level than those at present produced at the university, but the resulting practitioner was

MWINGIRA
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higher than the traditional rural health worker and could be very useful for the rural areas. Now my doctor friend says: 'If I teach in this institution, I will be denied membership in the Royal Society of Scientists, and I will miss a lot of privileges; so I am going to resign from the university. I can be appointed as a professor – in fact, I have been offered a senior lectureship in a university in the United Kingdom.' When I saw him a few days after this first conversation, he said to me: 'Well, I've been offered an appointment with the United Nations and I think I'll quit this job.'

It is an outlook shared by quite a number of young graduates from our universities. They want international recognition. They want membership of certain societies or institutions. To eliminate the qualifications of degrees and to eliminate these institutions is, in itself, to remove incentives for people to improve themselves further.

We are trying to solve these problems in our own way. We are building small barriers that we hope will help to keep the specialized skills within the country for long enough for them to become no longer scarce but rather common skills.

On the question of out-of-school education, my colleague, Thomas, has cited a scheme which we hope to adopt and develop. It is a very difficult project for a country trying to develop its industries. Industries require skilled personnel, and education is often called upon to provide it. Thus, I often get prospective investors who come to the ministry of education and say: 'Before we invest our three million-worth of capital in this country, we would like to know what the prospects are of getting skilled people to man our industry.' I tell them the prospects are not very good, unless they are prepared to provide some of the training within their own industry. I tell them that our government is prepared to import a certain number of expatriates on condition that they include people who are prepared to train local people on the job. Not all the investors are prepared to put an untrained hand on to their expensive machines. They say: 'If you take this educated but technically unskilled man and give him our machines, he will wreck them. No, we are not prepared to risk that much.' It requires a great deal of persuasion to get them to take on this basically educated young man and train him on the job. In this respect, we have to depend a great deal upon the good will of the investor. You cannot achieve by legislation the results that you want. We hope investors will eventually find that it is cheaper to run their industries in these countries with local people who get on-the-job training.

KOLLONTAI

Several speakers have criticized the degree system. Yet, if you did not have the degree system, if you did not pay higher wages

to people with diplomas, people would not study. What is needed is a new system for handing out degrees.

In the experience of the Soviet Union at the first stages of industrialization, diplomas were handed out to workers in special evening classes. These were not full diplomas. They were a certificate according to which workers could get a higher wage. To give workers a chance to study, the working day of workers enrolled into training schools was broken down into four hours' work and four hours' study. The system was used in the Central Asian republics and was abandoned only because a better system was introduced.

There was also the system where a person in teacher training had to practise by conducting classes twice a week. In this way, the teacher learned by thinking how to explain what he had learned to his pupils. Further, when it was the state that paid for the tuition, a person got his diploma after he had worked off two or three years of practical work in his field of study – especially when there was an acute manpower problem in this field. Then there was the system where youth was taught how to use equipment simultaneously with building the factories. All this adds up to the fact that it is possible to hand out degrees on different criteria.

GOURI

According to the studies undertaken by UNCID [United Nations Centre for Industrial Development], there is a gap between industry's actual requirements of knowledge and skills and the supply of such skills by engineers trained in the existing educational system. The problem, therefore, is basically one of how to bridge or narrow the gap between the fundamental knowledge gained at the universities and its application in industrial practice. UNCID has explored informal training programmes and is experimenting with ways in which training experience can be accelerated. As a first step, UNCID has undertaken the organization of in-plant group-training programmes for engineers and technicians in a variety of fields of industry with the co-operation of the industrialized countries.

Perhaps it will be appropriate at this stage also to refer to another wide gap in the implementation of programmes in industrial development. In the developing countries, the government official sometimes acts as a public-sector entrepreneur and takes an active part in deciding what kind of industries are to be established, the pace of implementation of industrial projects, allocation of foreign exchange, raw materials, and so on, although, very often, his background and experience are not commensurate with the tasks he is called upon to perform. The training of such persons would require an acquaintance with the nature of the processes of industrial development, and certain technical and econ-

GOURI omic characteristics of industries. There is a need, therefore, *cont.* to think in terms of training such personnel, and a certain amount of research as well as implementation in the training process itself is considered vital.

ERDER OECD is attempting to standardize educational statistics for planning, and the second stage of this effort is aimed at non-formal education. But I would here voice my doubts about giving new functions to educational institutions which are, themselves, obsolete. Vocationally oriented institutions, for example, are failures. We know very little about how education affects job function and other social roles.

CHAIRMAN In connexion with what has just been said, it seems to me that many people expect too much from the school system. They have a tendency to dump on the schools all of society's unresolved problems, and to look to the schools to correct all deeply-rooted social patterns that are out of line with developmental needs. The schools are having a hard time just trying to teach children how to read and write and they need to be improved when judged by that one function alone. In terms of our immediate problem, the question we face is how to bring about a direct collaboration between formal education and industry with regard to producing skills for the process of industrialization.

CALLAWAY I should like, Mr Chairman, to carry your remarks somewhat further. Instead of looking only at the school system to solve certain of society's unresolved problems, we should be looking also at other types of education – in particular, to non-class-room education – that are currently going on in developing countries. It is quite natural that I would wish to relate the range of possible policy options toward encouraging more, or more suitable, non-formal as well as formal education to the problem that I have been investigating: the lack of employment among so many of Africa's school-leaving youth.

Results from earlier surveys of jobless Nigerian youth in their search for work, undertaken in 1960, show that many young school leavers, on finding that they could not get wage-paying jobs as messengers or as clerks within government service, or with the more modern commercial and industrial firms, were seeking work as apprentices to indigenous proprietors of smaller enterprises in the back streets of the towns and cities. These school leavers were gaining their attachments to traders; to transporters; to artisans of all kinds such as carpenters, masons, bricklayers, mechanics; but also, and perhaps more importantly, to craftsmen and small industrialists including leather-workers, tinsmiths, sandal and slipper makers, bakers, tailors. In the same way, girl school leavers were following their mothers or relatives as apprentices in trading and in dressmaking.

This indigenous apprenticing system, formerly the preserve of unschooled youth, was thus giving training on the job to those school leavers who had already received from six to nine years of formal schooling. Their education was being continued, not in the more formal class-room manner that many of these school leavers and their relatives would have wished, but nevertheless being continued.

Because this system of indigenous apprenticing raised a number of questions of policy – both of education and of general economics – that governments would wish to be aware of, I then undertook an intensive examination of the many elements that compose it, and of the possibilities for its improvement. The objective was not only to identify the characteristics, social and economic, of these master-apprentice relationships. It was also to determine what policies might be followed in helping to raise the economic status of these smaller firms in order to achieve a balance of payments effect, through import substitution for foreign-supplied consumer goods, and simultaneously an employment effect, through the creation of new and better wage-paid jobs for school leavers. This further exploration led to the systematic interviewing of over 5,000 proprietors of small enterprises, all being craftsmen and small industrialists. Analysis of the results of this field work indicates that here could be a lively growing sector in the nation's economy, provided that existing knowledge is correctly used in devising, and in carrying through, policies for encouraging better performances. This would mean an approach, largely but not exclusively, through programmes of non-formal education. The purpose would be to help chosen proprietors to break through the constraints holding back higher productivity. Apprentices today become masters tomorrow; some can be assisted toward becoming promising entrepreneurs of the day after tomorrow.

It is apparent, therefore, that considerable thought should be given to the relative value of additional public funds spent on formal or non-formal education. Instead of simply blaming the content of formal education for the attitude of school leavers, a great deal more might well be done by supplementary educational measures directed toward raising more beginning jobs for school leavers.

THOMAS The present crop of extension people are concerned only with adults. They can be used, however, to help continue the schooling of the primary-school leaver up to the age when he can have a farm of his own. It is not enough to preach to the school leaver about going back to the farm. He must be shown the benefit of doing so. While the primary-school leaver lives at home – and cheaply – he can be trained on the land, with the help of the

THOMAS
cont. extension officer, away from his father's plot. He can be shown how to use simple insecticides and how he can come up with a better cash return than his father. In this way, with a relatively small amount of funds, he may get an improved farming and a higher standard of living.

CHAIRMAN Our discussion of education and employment thus far has led us into a number of interesting topics, such as labour-intensive technology, on-the-job training, expatriates, reform of the curriculum and so forth. But could we now take head-on the central questions: What is the basic connexion between education and employment – or unemployment? Is education the hero of employment or the villain of unemployment? And depending on what your answer is, what are its implications for educational policy and planning?

CALLAWAY I would like to register my personal view that the content of primary education has little to do with the generation of unemployment. However, the mere fact of going to school raises the expectations of these young people. Nor is it their expectations alone that matter. Because they went to school, they embody as it were the varied aspirations of their parents and other people in the village. We must consider these people as well as the school child. Even if there were no fees for his education, there are other costs – in the form of uniforms, the labour forgone on the farm, and so on. These represent expenditures by parents which may be one of their enjoyments but which may also be an incentive to further production on the part of the parents – and ultimately the child.

LÊ THÀNH KHÔI Rich countries are asking too much of the poor countries. After all, it took the Soviet Union quite a time to achieve full employment. And in the United States there are millions of unemployed even in times of prosperity. The poor countries are being asked to train every conceivable kind of economic and technical personnel. We should consider instead that it is the right to an education which is basic to a country – and that education as such is an important and powerful factor of change. On a long-term basis, education is both revolutionary and evolutionary.

BHALLA What we need is a cost-benefit analysis of various types of education. One type of education in a given situation may have a high social yield and a high direct economic return, whereas another may have little or no return. Should we promote the types of education which do not contribute to economic growth?

POIGNANT We have been embarked in pursuit of a panacea which is premised on the assumption that, if you educate the individual, economic growth will occur. We must instead strike a new balance between human and material investment.

HARBISON Under some conditions, education does generate unemployment

to the extent that education leads people to go from rural lands into the cities. Education of a higher type also leads to unemployment in so far as people with degrees are not willing to take lesser jobs.

KOLLONTAI I do not agree with the way the question has been posed about the relationship between education, unemployment and employment. In all the developing countries, there is a sharp contradiction between the problem of unemployment and the problem of productivity in the economy. There must be an increase in productivity if the economy is to be equal to the social load it is expected to carry; and for this reason, the problem of unemployment must be appraised not in isolation but in the context of the problem of productivity.

The problem of liquidating unemployment is going to take a very long time and education in any case is going to play only a marginal role. If so, we should concentrate our attention on the following questions: Is it possible to lower the threshold of expectations among people who go to school and get degrees? Is it possible to overhaul the school system so that it can make the maximum use of the resources available for investment in it? Within the curriculum, how can education bring about new attitudes and values concerning employment and kinds of employment? Can it teach people how to approach problems and to think clearly about them?

ERDER Education, by itself, cannot create unemployment. It can, however, change the quality of unemployment.

THOMAS I think the argument made in defence of education – namely that it is a consumer of a great deal of high-level manpower – is a specious argument. The worth of any activity can be judged only in relation to the demonstrable value of what it produces. The argument that education is worth while simply because it is consuming so much manpower can be made for almost any kind of activity. The more you expand that activity, the more people you will employ in it. But is the product of any use?

LOURIÉ I want to comment on the view expressed at this symposium to the effect that one cannot imagine a reduction of primary-school enrolments, if only because we would be throwing teachers back on to the labour market.

We are starting to notice that, in a number of countries, not only in Africa but in Latin America and Asia, the rates of growth of recurrent expenses in education – 80–90 per cent of which are represented by teachers' salaries – are much more rapid than the growth of enrolments, even in situations where the pupil/teacher ratio is considered relatively satisfactory. In a case like Argentina, where the teacher/pupil ratio for primary teaching is about 1 to 9, the ratio between the rate of growth of current expenses

LOURIÉ
cont.

for primary teaching and the rate of growth of enrolments is 5 to 1. In other words, current expenses are rising five times as rapidly as enrolments. How can this be explained? Partly by what Jolly has told us in his paper [see Part IV, page 237] namely, the upgrading of the teaching staff to higher levels of qualifications and thus to higher average salaries. This partly takes the form of hiring new teachers with full degree qualifications as more become available, where many of the older teachers were only diploma-holders and thus less well qualified.

But we observe also a second phenomenon to which Jolly did not refer in his text, and which is particularly striking in Latin America. It is that the older teachers, who do not possess the qualifications of the younger teachers, have succeeded in creating a system of 'recyclage' - refresher courses - which very quickly makes superior and inferior qualifications equal to each other. If it is said that this happens in only a marginal number of cases, I would agree that the concession made to a few older teachers in this matter will not change the national average for teacher qualifications; especially not in a profession constantly renewed by young recruits. But there is a very important sociological element at work in the picture. It is that the leaders of teachers' trade unions are, in general, the older teachers. Thus we are seeing a strong conservative spirit at the heart of the teachers' trade unions. Its leaders fight on the one hand to maintain relatively high salary rates, and on the other to increase the number of teachers in relation to other sectors of education.

If we accept the idea that education is the chief employer of educated manpower, we shall only strengthen the very tendency that we want to modify, if not to eliminate. We shall help create or perpetuate a type of teacher whose chief interest is not in education but in defending material and professional interests which go against the general public interest - a type of teacher also whose chief aim is to defend the very limited intellectual 'mandarinate' of the circle from which he comes.

In the case of Latin America, the very fact of the masses of children crowding into the primary schools means that primary education will be terminal education for the large majority of them. Yet the very idea of 'primary terminal education' is foreign to the type of teaching given in the teachers' colleges, which train an ever-growing mass of teachers who are becoming increasingly cohesive as a political pressure group. So let us frankly admit that education is but an indirect means of absorbing the unemployed in the 'tertiary sector' and say that we are merely subsidizing a conservative system of education in order to avoid unemployment.

HUNTER

I believe that, at this point, we could get rid of a fairly large

section of the economic problem by posing it as a problem of resource allocation. In Africa and in south-east Asia, which are the places I know a little about, you have 70 to 95 per cent of the economically active population in the rural areas. In the same areas, you also have land resources which often are either under-used, or in some cases unused. Now, the choice of the allocation of investment, between this sector and the modern sector, is an economic question which we cannot generalize about. It must be decided in each particular economy, with due regard to its state of growth, its resource position and its opportunities. But I think we can say that, if the choice swings heavily toward the industrialized and modern sector, the question must be faced whether the country can live through the next twenty years with 70 per cent or more of the population failing to have its aroused expectations satisfied. This is not an 'either/or' matter. The question is how to strike a balanced allocation of resources between the agricultural and the modernizing industrial sector.

I would add that, in my view, it would be premature to balance massive investment in industry against massive investment in the rural area. It is quite true that investments in the rural economy must be larger in the long run. But I think – and it has been often pointed out – that there are opportunities to secure immediate and fairly substantial short-term gains in the rural economy on the basis of existing land, existing knowledge and with a relatively smaller amount of investment. To open up new lands, however, may require a much larger investment that may have a relatively low yield for years to come.

I believe that the third five-year plan in India indicated that the capital/output ratio for agriculture was 0.9 : 1. In industry, however, it was much higher, as much as 5 : 1 or 6 : 1 for railways and roads. In other words, the capital/output ratio – the amount of output obtained per year for a given input of investment – was lowest in the agricultural sector. So that, if this question were seen as one of allocation of resources to sectors, as Kollontai ably put it, I don't feel that it is possible for this meeting to reach any conclusion as to what the exact equilibrium should be. But, in so far as it might be said that an increased allocation to the agricultural sector is needed because here is where the political expectations of a vast proportion of the population lie, then we could direct ourselves to what are the inputs into the rural economy which are most economic and most effective. By inputs I mean physical inputs such as fertilizers, or educational inputs such as extension services or formal and informal educative efforts of various kinds. I am saying that there are a great many unexplored possibilities and questions as to the priorities of input, the phasing of inputs, and the

particular conception of the package of inputs in educational and technical terms.

BHALLA It seems to me that the problem of creating employment opportunities is mostly economic in character. In the first place, the capacity to create employment in the economy is limited by the economy's capacity to absorb investment – which is, in turn, limited by the shortage of skills. Second, from a policy point of view, and as a guide to educational planners, the manpower situation can act as one of the indicators. In most of the developing countries, we know the rate of unemployment at the levels of primary, secondary and higher education. If, for example, the rate of unemployment among university graduates in India is very high, this can be an indicator for educational planners to slow down higher education, or at least formal higher education. This is one way of changing the proportions. It can indicate the proportions for reducing investment in higher education, for example, if in contrast the rates of unemployment at secondary education are very low.

WILSON On the question of increasing productivity by evolving new and more productive forms of land use, I feel there should be much more emphasis on the private sector and that farming must be viewed much more as a business. Ministries of agriculture are finding solutions to many technical questions, but it is in the actual business of farming that a great deal is also learned. Africa is littered with settlement schemes that have not, unfortunately, proved economically viable. We must educate people who will be able to go into farming, approach it as a business proposition, and make a success of it – something which the civil servant by the nature of his work and employment is not so well fitted to do. He can study farming systems and individual farm enterprises and obtain invaluable data from them. But it is the farmer and the farming community who must do a great deal to explore and evolve viable systems of farming.

RAO I agree with Harbison's view that primary education can produce unemployment in the sense that it can create an aversion to existing employment opportunities. A person growing up in a village who does not go beyond primary education and who is going to stay in the village can get a type of education which makes him contemptuous of his father's way of life and of the kind of income to be secured from the land. Incidentally, there is a difference between the position in India and some other countries with which I am familiar. In India, primary-school leavers do not get civil service jobs. This would be more true of college graduates in the arts and humanities. Having been in Uganda, Kenya and Nyasaland, I have a sense that secondary-school leavers in those countries have been given jobs

which would normally be taken up in India by university graduates, including those holding master of arts degrees. At the same time, the performance of the people in the African countries I visited makes me wonder if we have not over-emphasized academic qualifications in India as a prerequisite for jobs. What has been happening in India is that our own university graduates are now taking up jobs which could be done by a matriculate. We are trying to restrict enrolments in the universities, but, once you have primary education, you set in motion a chain-reaction of pressures. Primary education leads to middle education – which leads to secondary education – which leads to university education. We can only try to have more diversified courses and multi-purpose schools, so that at a given age a young man of 14 or 16 can go off and get a job. We can also try to raise the qualification standards for admission to the universities. Primary education exists in India, not as a passport to employment, but because, under our written constitution, we are pledged to provide universal free compulsory primary education for children up to the age of 14. The question of the cost-benefit ratio, therefore, does not apply. Nor does the question present itself as to whether education leads to employment. The kind of primary education we are giving today will definitely create problems in the countryside. It is possible to change the content of the primary education, and I think it is absolutely essential that this be done by the educationist. But educationists cannot provide all the answers merely by changing the curricula for education and the methods of teaching. We must also have the necessary environmental changes in institutions, social and political climate, and so on. This is important not only for my own country but for the African countries as well, since they are reaching the stage where they are producing more and more secondary graduates and university graduates. To what I have said about the way primary education can contribute to unemployment, I would add that, at higher levels, education can definitely create unemployment when it produces specific skills for which there are no job openings. There are specific skills which society has a right to demand of its educational system. But who is to establish the proportion of the skills that are needed? You cannot expect the educators to decide this question by themselves; they need the indispensable guidance of the manpower planners.

To come more directly to the positive effects of education on employment: education removes manpower bottle-necks that hold back economic growth. After India gained its independence and we set about drawing up a national development plan, we created a committee that was to determine the number of

RAO engineers and other technically trained people who would be
cont. required. Then, with this information in hand, we spent a great deal of money in deliberately creating a number of new engineering colleges and polytechnical schools. If we had not done this, the plan would have gone completely off the rails. This is because the private capitalist does not create his own engineers or his own diploma people. He just advertises and he gets them. If the trained manpower supply had not been there, a very great bottle-neck would have imperilled the plan. There is, therefore, no question in my mind but that education which is linked to manpower planning can do a great deal to increase employment, to increase production, to increase employment opportunities and, above all, to form a proper attitude toward work itself. Finally, I would very strongly agree with a conclusion voiced by Wilson a moment ago, though I disagree with his logic. His logic is that the public sector is unfit or is less fit for doing economic activity than the private sector. I am not prepared to concede this point. I agree with him, however, when he stresses the importance of an educational system that will increase productivity in the self-employed occupations where most of the jobs are to be found – not only in India but in most of the other developing countries. Indeed, education can play a positive role, not only in creating jobs but in increasing the productivity of the jobs held.

CHAIRMAN Our discussion of education and employment has shed useful light on several dynamic aspects of development which educational planners and economists should bear in mind. One significant point brought out in Professor Rao's analysis of India's experience is that, as the supply of educated people improves, the educational equivalents for various jobs tend to rise also. Thus a particular job is upgraded even though its label remains unchanged. This same 'upgrading' phenomenon is to be found in the history of more-advanced countries, such as Japan and the United States, where positions formerly requiring a high-school diploma now call for a college degree. Upgrading, then, is one of the important forms of adjustment between educational output and the supply of jobs. A second point concerns the dynamic way in which education feeds and multiplies its own demand, quite independently of what national manpower requirements may be, by heightening the educational ambitions of people. When the gates to primary education are flung open to the educationally under-privileged, this inevitably results a few years later in great pressure to broaden secondary educational opportunities and this, in turn, gets reflected in higher education. Individual aspirations have a snowballing effect, and translate into inexorable political

pressures and public policy decisions. Educational planners who simply decry or ignore these realities will emerge with statistically tidy plans that never get implemented.

A third and related point, and this foreshadows our discussion of implementation, is the dangerous hidden assumption that in choosing between different types of education and different types of job, people will behave the way the planners wish they would. If, for example, the manpower planners have plotted the long-run manpower requirements for national development and the educators have reshaped the educational system to turn out just the right numbers and proportions of graduates at each level to match this pattern of requirements, is the 'fitness' problem then solved? Has the right balance been achieved? Not at all. The problem remains of persuading people to follow these educational paths and to accept these various employment opportunities in the right numbers.

We know from experience that individual decisions often have a way of defeating the best-laid blueprints of the planners, partly for irrational reasons or out of ignorance, but very often for very rational reasons pertaining to the structure of economic and social incentives. Not infrequently, as has been emphasized here, the prevailing incentive structure works directly against the successful implementation of a seemingly rational plan. But we will come to this matter of incentives later. The main point now is that people who are given expensive training for jobs they do not get – or may not want – constitute in some measure a waste of scarce educational resources, which might otherwise have been used more productively to foster development and to create employment. In this sense, we seem to be agreed, education may actually contribute to unemployment; not because it is education, *per se*, but because it is the *wrong* education in the circumstances.

But for the most part, we also seem agreed, education is not the perpetrator of unemployment; its main effect in this regard is to make the unemployed and the underemployed more visible and in some cases more frustrated and vocal.

What can education and educators do to help the employment situation? Theoretically, much can be done, we have agreed. We can alter the character and the quality of education, with a view to breaking specific manpower bottle-necks and, more broadly, to inculcating the skills and knowledge, the attitudes and motivation, and the sense of initiative and entrepreneurship required on a vast scale for successful national development. Educational development can be shaped to match manpower requirements; better vocational guidance can be provided; educational administrators can be more realistic about resource

CHAIRMAN scarcities and bend greater effort toward the more efficient and
cont. productive use of available educational resources through better
 management, innovations and otherwise.
 But in saying all this, we have not solved the problem. We have,
 perhaps, helped define it more clearly. But we have loaded upon
 the hard-pressed educators of developing countries some enormous
 problems to solve, regarding teaching and curriculum,
 that have so far defied satisfactory solution in the most-advanced
 countries.

III Rural development

- G. Hunter Manpower and educational needs in the
 traditional sector, with special reference
 to East Africa
- R. Dumont African agriculture and its educational requirements
- Colloquy

Manpower and educational needs in the traditional sector, with special reference to East Africa

This paper is an attempt to put into a more general framework the main points which emerged from a study based on a short but intensive visit to Tanzania at the turn of 1965-66.¹ The main points, stated immediately in summary, are as follows:

1. Manpower planning, and in some degree economic planning, has failed to take into account the development and the best use of four-fifths of the potential human resources in such countries as those of East Africa.
2. Even with the maximum feasible programme of industrialization, this development of human resources can be achieved on a large scale only within the rural economy.
3. Resources devoted to formal primary education (and soon, to some proportion of secondary education) are outrunning resources devoted to creating economic opportunities for the school leavers and thus in some degree are wasting a large investment. In consequence, far greater emphasis, in national plans and by aid agencies, should be placed on educative services directed to increasing the productivity of the rural economy (i.e., mainly to adults).
4. All educative services (formal education, agricultural extension, community development, youth service, vocational training) should be regarded as branches of a single educative effort in which the balance between each branch can and should be adjusted to the changing needs of economic and social growth.
5. Finally, in view of the falling age of primary-school leavers and the decreasing openings for training open to them, urgent action is needed, on educational, social, political and economic grounds, for new and extended educative or training programmes for the age group 12-18.

¹ Guy Hunter, *Manpower, employment and education in the rural economy of Tanzania*, Paris, Unesco/IIEP, 1966

Background of social and economic growth

The relation between African education and the development of the African rural economy has gone through several phases. They may be roughly divided into four.

In phase 1, the era of first European involvement, certain agricultural resources were vigorously developed by European initiative to produce export crops. In west African territories under the control of the United Kingdom, this was carried out largely by European companies stimulating native production (in vegetable oils, cocoa, etc.); in East Africa the main cash crops were developed chiefly by European settlers.¹ Very considerable wealth was generated, and a growing revenue from export taxation accrued to the local government. Capital accumulation flowed mainly to the foreign investor. Vast areas of the African subsistence economy were quite untouched.

In phase 2, colonial governments began to use the revenue so generated to provide education, in co-operation with the church missions. There was an outlet for the best primary pupils in a limited range of occupations outside agriculture. The prestige of education among Africans was born.

In this phase, government attention to the African subsistence economy was mainly regulative, concentrating on attempts to prevent destruction of the habitat by erosion and overgrazing, for example. There was a direct clash with African custom and tradition, and from this arose the widespread pattern of an extension service, backed by a penal administration, battling against obstinate, change-resisting African farmers – this phase is well illustrated in the story of Nyasaland in the post-war period.

It is important to note that, in general, cash-crop development preceded and largely financed the first widespread provision of education by government, although the isolated missions had started earlier.

In phase 3, from the rise of nationalism to independence, education – favoured both by government and by nationalists – expanded somewhat faster, still financed mainly by export crops in an economy which had not greatly changed its shape. The resistance to agricultural change was often exploited and redirected by nationalists into the political battle against the colonial government (for example, the opposition to terracing in central Kenya, or to land consolidation in Nyanza). Only in the latter part of this phase was some real success achieved in developing African cash-crop agriculture (the Swynnerton plan in Kenya, Mwanza cotton and so on). Meanwhile, the

¹ This is a very rough statement: cotton development in Uganda was more on the west African pattern

fact that education led to a paid job outside subsistence agriculture was more and more firmly imprinted in African minds.

In phase 4, the early years of independence, while educational effort was vastly increased, there was a major switch in economic policy.

In education, political promises and pressures pushed forward a massive expansion of primary education; but official policy and foreign advice and assistance were concentrated on developing 'higher-level manpower' to replace colonial administration. There was soaring financial aid to universities and other higher institutions, and fabulous, lifelong rewards for those Africans who could complete a secondary or higher course. The financial burden of this effort on public budgets began to become threatening.

In economic policy, meanwhile, there was a major effort to alter the whole economic structure, to escape from dependence on primary exports and to create internal capital formation through internal industry and development. Very large sums of capital, partly borrowed, partly raised from taxation on export crops, were invested in major installations and in economic infra-structure.

In the nature of the case, much of this investment (even when well directed) did not bring quick returns in revenue. Most tropical African economies became more and more heavily burdened, not only by the infra-structure investment but by the capital and, above all, recurrent cost of educational and social-service expenditure. The economies were kept afloat, partly by further development of the original European-initiated cash-crop investment, partly by external assistance and partly by the growing success of certain, fairly restricted, areas of reformed cash-crop production by Africans.

In summary, phase 1 contributed the first main revenue-producing investment, upon which phases 2 and 3 were coasting, while administration, communications and an educational system were consolidated. Up to this point, a high proportion of effort in African agriculture was conservational and marked by friction. In phase 4 another large investment was made, but largely in revenue-spending services (larger administration, education) or in infra-structure with long-term pay-off. The main employment-giving and revenue-producing advance among the mass of African population lay in those restricted areas where African cash-crop production has been successfully modernized.

The contemporary situation resulting from this sequence can be described in terms of three significant aspects: education, the economy and attitudes.

In education, the great effort to produce high-level manpower has largely succeeded in substituting Africans for Europeans in the top layers of administration. But it has not, of course, changed the basic social-economic structure, which remains in many countries 80 to 95 per cent rural. However, this production of top Africans tends to go on expanding, partly because

administration continues to become more westernized and complex (planners, statisticians, economists, university staff, and so on);¹ partly because external assistance agencies continue to encourage and assist the foundation of highly sophisticated institutions, requiring yet more highly educated staff.

Meanwhile, at the low level, the schools are producing a great volume of pupils, educated, however slightly, with a view to participation in the new culture, but for whom the new culture offers as yet almost no opportunity. They hang about its fringes, or are forced unwillingly back into the old, into unreformed subsistence agriculture.

The economy, now carrying a far heavier superstructure of spending services, is still resting on a narrow base, though better prepared in infra-structure for the next stride forward. Recurrent revenue is thus overstretched. There is a desperate need for new short-term revenue-producing expansion on a far wider base in the rural economy, where potential is still grossly underdeveloped.

In attitudes there is, on the government side, a certain nervousness in commitment to a wholesale onslaught on agrarian reform, born from the experience and disappointments of phases 2 and 3. In consequence, agricultural extension has lagged far behind the expansion of school education. On the peasant side there is, among the young, an insistent desire to escape from the poverty and drudgery of subsistence agriculture, which takes the form of a passionate demand for education, the historical means of escape.

It may be useful to exemplify this situation by giving the key facts in a single country – Tanzania.

Tanzania

The population and labour force of Tanzania (according to a recent estimate) are shown in Table 1.

For this labour force of 3,805,000, the official employment statistics give a total of 352,000 in wage-paid jobs in 1964. The five-year plan estimates that this figure should rise to 442,850 in 1968/69; the further target is 731,000 in 1978/79, based on assumptions of a 5.1 per cent annual growth in employment and of a 7.7 per cent annual growth in gross domestic product. (These projections are on the optimistic side; there is much reason to doubt a 5 per cent increase in employment even if a 7.7 per cent GDP growth is achieved.)

The discrepancy between total labour force and total wage employment is

¹ Senior administrative posts in Tanzania have almost doubled since independence, i.e., in five years

TABLE 1. Population and labour force of Tanzania in 1965 (in thousands)

Category	Total population	Population age 14-64	Labour force ¹
Male	5 127		2 189
Female	5 121		1 616
Total	10 248	5 439	3 805
of which			
Rural	9 783		3 663
Urban ²	465		142

1. i.e., the non-institutional population 14 years and over, less those outside the labour force
 2. The urban population is calculated on the basis of settlements containing 5,000 or more Africans in a gazetted area
 SOURCE Ministry of Economic Affairs and Development Planning, *Labour Force Survey of Tanzania*. Prepared by Robert S. Ray for the Ford Foundation, Tanzania, January 1966

not quite so startling if it is remembered that the figure of 352,000 is based on returns from regular employers employing five or more persons. Ray's survey shows some 750,000 persons in the labour force who had some wage earnings (rural, 673,000; urban, 73,000), including casual, seasonal and part-time employment, and full-time employment in very small units. Nevertheless, the discrepancy remains enormous. If we compare paid jobs available with entry into the labour force, we have the following estimate (for the plan period 1964-69): total new jobs, 110,000; estimated new entrants, 1,150,000 (of whom 231,520 will be standard VII-VIII school leavers).¹ It is clear that the vast majority of the new entrants, including at least half those who complete a full primary education, must remain self-employed in the rural economy. The educational qualifications of the rural labour force are shown in Table 2 (Ray's estimate).

TABLE 2. Educational qualifications of the rural labour force in Tanzania in 1965 (in thousands)

Standard	Number	Standard	Number
No education	1 966	Above standard VIII	152
Standard IV	1 000	Total	3 663
Standard V-VII/VIII ¹	545		

1. The primary course is being reduced progressively from eight to seven years
 SOURCE Ministry of Economic Affairs and Development Planning, Tanzania, op. cit.

¹ R. L. Thomas and J. B. Seal, Paper to East African Staff College, August 1965

The first response to this table may be of shock at the low level of education. But the vital fact is that nearly one-and-three-quarter millions *have* had four years or more of education; compare this with the number of paid jobs available. It may be interesting to look at the educational experience of a single age group – those who entered school in 1961/62. (See Table 3.)

TABLE 3. Educational progress of age group available to enter standard I in 1961–62 in Tanzania

Category ¹	Number	Percentage
Did not enter school in 1962	117 000	46.8
Received up to four years education	81 000	32.4
Received up to seven years education	45 000	18.0
Entering secondary school in 1969	7 000	2.8
Total age group	250 000	100

¹ Pupils enter standard I at about 8 years of age
NOTE All the figures are approximate

Here we find four basic facts upon which much of this paper rests. Over 80,000 children with four years' education leave school finally every year, aged about 11-12 years. About 45,000 more young people with seven or eight years' education leave school finally each year, aged about 15 years. Only 2.8 per cent of an age group ever enter secondary education.¹ For each 250,000 age group entering the labour force, only about 23,000 jobs in organized employment and 6,000 places in secondary school are now available annually.

For reference, comparable figures in Kenya show an annual output of about 150,000 school leavers at standard VII/VIII level, 15,000 places per annum in government secondary schools² and about 35–40,000 paid jobs per annum arising in the economy. Thus nearly 100,000 standard VII/VIII leavers each year must make their own adjustment to 'self-employment'. In Uganda the problem is only now becoming urgent.

¹ They are at present about 10 per cent of all primary standard VII/VIII leavers

² Almost as many again enter privately financed *Harambee* schools of very doubtful quality

Problems and strategy

So much for analysis. The problems are, I think, clear enough in broad outline. The economic and manpower problem is that of developing useful jobs for the huge reservoir of manpower in the rural economy by developing the productivity of the land. In terms of employment, it is clear that modern, organized, wage-paid employment cannot conceivably absorb more than perhaps a quarter of those entering the labour force in the next decade. It follows that self-employment in farming must be made more productive and satisfying; and this, in suitable circumstances, we know can be done. If this agricultural revolution is successful, derivative employment should also greatly increase. In terms of education, the problem in this context is to concentrate on bringing up those educative services, more particularly agricultural extension, to a far higher level, much nearer to a parity with the expansion of the formal school system. This may well involve economy and restraint in the expansion of the highest and most costly levels of formal education, which are tending to 'take off' under their own momentum, helped by administrative inflation and donor policies. The resulting economic problem is dealt with in the section 'Educational and rural development' below.

The second problem is more social and educational. It is the problem of the age groups 12 to 18. The gradual fall in the age of school leavers means that standard IV leavers (11/12 years) are too young to join the labour force, and most standard VII/VIII leavers (about 15 years) stand little chance of employment in competition with the older unemployed from previous output. This problem is seriously aggravated by the raising of entry standards to major training schemes. The expansion of secondary schooling means that employers (especially government) can and do demand the school certificate or form 4 qualifications for teacher training (post-standard VII training is to be abolished in Tanzania), extension work, medical services, administration and other employment. Thus the ladders are being knocked away between that 95-96 per cent of all children who will not find a secondary place and the 3-5 per cent who do, and who thereby enter that blessed world of opportunity and higher earnings which education once offered to the primary leaver. This twin problem of children and teenagers is considered in the section 'Ages 12-18: the educational vacuum' below.

Education and rural development

Emphasis on agricultural development must not be thought to deny the contribution of major industrialization, which can help to draw surplus labour from the land into factory employment. The issue is one of scale.

There is no evidence to show that any scale of industrialization which is feasible in the next ten or fifteen years can make more than a minor impact on the employment problem, though it may make a significant contribution to revenue and capital formation.

'Intermediate technology' cannot, by itself, drastically modify this prospect. Clearly, having regard to wage levels, the size of market, and labour supply, there are forms of industry best started with relatively labour-intensive methods and relatively cheaper technology. Two practical illustrations may be given. In Kenya, the Metal Box Company found that their latest machine would meet the requirements of the East African market from one month's output; a profitable alternative was found by bringing in a 35-year-old model from South Africa, with increased labour utilization. In Malaya, Lever's intended to use a mechanical packaging machine for one of their products; it was found, *at the current wage level*, more profitable to employ girl hand-packers: the machine will be used when the wage level rises too high. (There are interesting implications here on wage policy, too complex to develop in these pages.)

Probably the most widespread and useful application of appropriately simple technology lies in the development of rural processing and similar industries in association with an improved agriculture.

It is not, however, the choice of technology which is decisive. It is the volume of purchasing power. Arthur Lewis pointed out in 1958 that the route to industrialization lay through agrarian development, which would provide a market for industrial goods.¹ The same point has been made again and again by economists in subsequent years. No one would deny that the long-term objective in East Africa, as in other developing countries, must be a far higher degree of industrialization and urbanization. The short-term problem is how to advance toward this goal.

In terms of earnings and useful employment, the first major effect of agrarian success is in revolutionizing the output and income of the farmer himself. But in a second stage a secondary effect, resting upon this increase in purchasing power, becomes even more important. This is the generation of employment and incomes in processing of farm products,² in services and supplies to the farmer, in local distribution services (retail, transport, credit, etc.) and in construction. In any developed rural economy employment in these related occupations comes to exceed total employment on the land itself. In the last stage, fully modern agriculture needs a major industrial base.

¹ W. Arthur Lewis, *Industrialization in the Gold Coast*, Accra, Government Printer, 1958

² 'Farm' includes all organic products, e.g., timber, fish and fibres

To achieve major agrarian development more is needed than educative services. Capital (particularly for roads and water control), possibly changes in land tenure, credit, fertilizer, marketing, research, and in some cases (though in fewer than might be supposed) major capital-intensive transformation (dams, large-scale settlement, etc.) are all needed. But in a situation where capital is scarce, and where existing farmers, on existing farms, with adequate fertility and climatic conditions, are producing a half, or a third, or a quarter of potential output, a huge share of agrarian advance depends upon the education of the existing cultivator – and this largely applies to change in land tenure, to the use of credit, and to the use of already existing research results. The achievements on Mount Kilimanjaro or in the Mwanza area were based almost wholly on agricultural education in known techniques, on disciplined management, and on co-operative marketing and services.

Although formal research results in this field are too few, it is reasonable to conclude from historical evidence that it is not lack of formal education in school which is mainly inhibiting agricultural advance; and it is equally unlikely that schooling by itself will produce it. Lack of education certainly creates some difficulties, though some of the best African farmers have had few or no years at school. At a later, more technological stage of advance, a better education might become a necessary condition – it will never be a sufficient condition. But in the next five years, in which Tanzania will produce over 200,000 standard VII school leavers, and over 400,000 standard IV school leavers, school education will be far in advance of the opportunities open to its pupils.

Nor is it the much-criticized school syllabus which is primarily to blame. It could certainly be much improved. But there is abundant evidence that the schools by themselves are powerless to alter the decisive attitudes of the cultivators and powerless to teach agricultural innovation to children in primary classes. It is the educative effort of agricultural extension workers which is grossly insufficient at the present time. In Tanzania, with one extension officer to 1,700 farming families, the service is, in many areas, well below the threshold of effectiveness. Much the same could be said of many other countries in tropical Africa – in Zambia the agricultural potential away from the line of rail has barely been scratched; in Uganda a huge potential is barely half developed.

Since it is the chief thesis of this paper that a major redirection of educational effort should now take place toward those educative services, particularly agricultural extension, which are quite directly aimed at rural development, it is therefore necessary to consider how such a policy could be financed, and how effective it might be.

Finance, acceptability, and training

Finance and deployment

Shortage of revenue is a critical constraint in expanding educative services. How is more money to be found for their expansion? One avenue of approach is by achieving economies in the recurrent governmental expenditures on these educative services. A second is by achieving economies in the methods used to initiate agricultural change. The two, viewed in combination, would entail, among other things, the following:

Making high-value crops carry directly the cost of extension services. There are many examples – ‘outgrower’ schemes for tea (Kenya Tea Development Authority), tobacco (East African Tobacco Company), cotton (Sudan Gezira Board), and many co-operative schemes which carry the cost of extension in the difference between the price paid to the grower and the selling price. There is, of course, an element of working capital cost here when new schemes are started – the advisers have to be employed before the new scheme is productive. But successful schemes will absorb these salary costs quite quickly.

The cautionary note to this method is that administrative cost must be kept to an absolute minimum. There is acute danger that, both with boards and co-operatives, the overheads of administration and (particularly) marketing become excessive. This not only loads the economy with unneeded clerks and officials, but the resulting low prices paid to growers discourage them from expansion and higher productivity. A very clear distinction needs to be made between essential advisory and technical services and marketing administration.

Bringing the farmers to the extension service, rather than vice versa (the doctor's-surgery principle). Farmers' training centres may achieve this efficiently. It may be worth considering also the Malawi experiment of having more, but smaller and cheaper, centres within bicycling distance of farmers in densely populated areas, staffed by a slight increase of the regular extension service. The economy will only be achieved if the throughput of the training centre is high.

Concentrating the extension personnel on areas of high potential and high local energy. Where the extension services are below the threshold of effectiveness, the recurring expenditures of skill and salaries are being largely wasted. Thus the return in increased production per extension worker may be extremely low in areas where either soil/climate conditions are intrin-

sically bad or the local people are still resolutely conservative. For example, cash-crops such as cotton and tobacco may be grown but never fully picked because the growers have gone off to sell their maize crop in another district or on a traditional honey-gathering expedition, or simply because the grower, once his relatively low income target is reached, is not prepared to work more to get the extra yield.

But the principle of concentration has other advantages. It means that complementary branches of the extension service can give each other mutual support, and that there is far more chance of paying for the service through increased yields, which increase crop cesses and government revenue. It will also tend to create broad zones of higher economic activity, to which population is attracted, in which derivative employment is generated, and in which it will become far more economic to provide roads and social services. This is the principle of 'village-ization' on a larger scale. The poorer or more conservative areas will later seek to copy the success of these zones and be more willing to accept advice.

Economizing on expensive staff by the delegation of routine work to cheaper, post-standard-VIII staff. Experience shows that keen, modernizing farmers make more demand on advisory services, not less. Schemes and experiments which are rightly proliferating all over East Africa are also building up a staff requirement far beyond current and proposed establishments. At the right stage and in the right circumstances, it may be worth while to increase the 'infantry' of the extension services by a renewed use of junior staff with only primary education – especially where a large number of new schemes are showing signs of success. The type of training for this junior staff may be for carrying out a mass of simple but essential tasks (dipping supervision, for example) upon which a staff with much higher training would be wasted. This is a low-cost way of adding to the service.

Resorting to the even less costly use of 'model' farmers to encourage and advise others. Their advice is the more acceptable from the visible evidence of their success.

Diversion of much of community development, youth, co-operative and voluntary-agency effort to direct 'producer' education. The object would be to use a greater portion of existing expenditures on forms of assistance that would contribute directly to raising economic output, to raising recurring revenues, and to helping to preserve and make fruitful the existing investment in education.

Diversion of some resources from 'transformation' to 'improvement', wherever capital expenditure on transformation is, by ruthlessly critical standards, too high. The most expensive road to development is the concentration on schemes for large-scale development which require large quantities of capital and skilled manpower. It often means that the government denies itself the resources it needs to break bottle-necks constraining marginal improvements in small farming systems. There is certainly much evidence that the return on employing one efficient extension officer to develop new crops with existing farmers can be many times higher than that from the same investment on more elaborate transformation or resettlement schemes.

Strict economy in higher education and diversion of resources not used for its expansion to expansion on the productive front. In most developing countries, from Nigeria to Malaya, there are expensive institutions turning out young men who cannot find employment in an economy with extremely little modern industry and a rural economy which will employ either cheap labour or no labour at all. Most investment in educative services directly aimed at increasing production and economic opportunity might well set in train a number of much more beneficial results.

Thus, higher farm incomes would mean higher purchasing power, leading to increased employment – in services to the farmer, in distribution of consumption goods, and in the creation of industries which can be established once there is a market for their products. Higher output would also increase the taxable resources which would provide local and central government with additional recurrent revenue from which additional educative services can be provided.

Use of foreign aid, possibly even to 'take over' a section of extension work on defined 'project' schemes. Foreign donors, anxious to show their generosity, are apt to set standards in building and equipment which are totally out of scale with the economy, and which, nevertheless, make for dissatisfaction with the standards it should rightly use. Moreover, the original gift leads to recurrent costs which the recipient country must meet, yet can ill afford. It might be possible and fruitful to design an agricultural project, in all its ramifications, and to parcel out among donors particular sub-aspects of the 'project' for which each would be responsible. Moreover, it may be possible to obtain additional technical assistance in the form of expert personnel. Although not inconsiderable local costs are involved for such things as housing and transport of technical assistance personnel, these are certainly lower than the costs of additional training and full salary payments. There is particular difficulty in any slowing of expansion of higher education, partly for reasons already given, partly because cost per place in African

universities is excessively high and expansion of numbers might seem likely to reduce it. But it is total cost which matters in this connexion.¹ It is but small comfort to have more but slightly cheaper graduates if more graduates are not the first priority. If higher education is to expand, at least let the increase be in the biological and physical sciences, where graduates may contribute directly to short-term increase in productivity.

Acceptability

It cannot simply be assumed that a much strengthened extension service would have an early and dramatic influence on rural productivity. Indeed, the depressing friction of the regulatory period has left a slightly pessimistic attitude toward this proposition. However, later experience has amply proved that, where agricultural innovation has genuinely succeeded in increasing cash returns to farmers by a major amount, resistances, even including major customary and tenure problems, have quite rapidly melted; indeed, extension staff have been overwhelmed by requests for help and expansion of the extension system. Neither conservation nor provision of social benefits have the pulling power of cash returns. This is a strong argument for concentrating effort on areas which have enough potential; news of their success spreads and helps to break down conservative attitudes elsewhere.

In the special case of young men, there remains the difficulty of their unwillingness to 'go back to the land'. It is vital to accept this as a reasoned objection - reasoned because both past and much current experience teaches that paid employment off the land has been far more profitable. Ray's income estimates in the rural economy of Tanzania are shown in Table 4.

TABLE 4. Estimates of income in the rural economy of Tanzania
in 1965 (in shillings and cents)

Occupation	Weekly income
Family farm	8.23
Farm plus additional off-farm activity ¹	38.16
Exclusively off-farm ²	55.06

1. Off-farm: 31.55

2. Self-employed: 68.44; wage-employed: 48.72

¹ Dr T. Soper has put this in economic terms: the lowering of unit costs in the educational sector involves an opportunity cost in relation to the whole economy, where other opportunities of investment exist

These figures may well be inaccurate, as Ray confesses, but the *general* proportions they show must be significant.

In a word, young men ought not to spend their lives in unreformed subsistence agriculture, at first under the domination of a tradition-bound community of elders living in great poverty. Nothing the schools can do, however reformed, and no amount of national propaganda can overcome this.

The first and vital condition for changing attitudes is demonstrated success in raising farm incomes by a substantial proportion; the technical decision by agriculturists, followed by successful and disciplined implementation, is crucial. There are other conditions – for example, means of ensuring a cash income to the family farm worker, education, etc. – which are important, but beyond the scope of this paper. It is primarily cash returns which will make agriculture respectable.¹

It should be candidly stated, however, that we are on uncertain ground when we ascribe to school leavers a given set of negative attitudes toward farming. The whole of the subject is badly in need of more research, addressed to questions of the following order: Are the school leavers unwilling to return to *modernized* farming, where the family income is relatively high? Are they unwilling to enter a new, modernized settlement? Is it the type of farming, or is it the quality of social life and discipline in the village which is more important in forming their attitudes? Is it felt they lose face by returning to the village? If so, in whose eyes – the school leavers, their parents, or village opinion generally? Is there any difference between those who left the village to attend a standard V–VIII boarding school and those who attend a local ‘Extended primary’? Would they be more interested in looking after livestock than in cultivating land? Is an individual cash earning of great importance? If so, is any cash payment made to young family workers on cash-crop farms?

Training

Training to take varied parts in an increasingly prosperous rural community comes but a short step after – *but not before* – the training of farmers themselves and the evidence of success shown by rising incomes. In the past, most official effort in vocational training has been too highbrow – the insistence on long training to produce formal qualifications from trade schools

¹ In the United Kingdom before 1939 the semi-skilled factory worker was of low esteem: education was a gateway to white-collar work. The high earnings on the factory floor today result in queues of clerks for a place on the production line

and technical colleges. The output is both too expensive and (in present circumstances) over-trained for any employment except the small volume of government and industrial employment in the tiny modern sector. The need is for much simpler, shorter and cheaper vocational training at district and village level, designed to help the farm worker, the book-keeper in a co-operative, the shopkeeper, weigher, handyman, lorry or tractor driver, poultry-keeper, stockman and the like. Many earlier schemes, on a small scale, have failed because they were introduced *before* the rise of farm incomes. Now that in some areas prosperity is increasing, there is evidence of demand and reason to fill it.

It is a sign of over-concentration on 'high-level' manpower, with its standards of full trade-school, trade-tested, City and Guilds artisans and technicians, that so little has been done lately to provide the simplest additional training for rural handymen – often standard VII/VIII boys – who can both earn a living and perform a most useful service *at wages which the farmer will pay*. At this moment in Tanzania the last formal trade school (Moshi) is about to finish its last trade courses (plus a relic course from Ifunda), after which both Ifunda and Moshi will be secondary technical schools and there will be no trade school in Tanzania.¹ The reason is mainly that the number of modern industrial employers who will pay full rates for a fully trained artisan is too small still. Yet in a 90 per cent rural society starting an agrarian revolution there will be thousands of jobs for rural handymen – vehicle maintenance, pump repairs, blacksmithing, leather and rope work for farms, fencing and – above all – house building. Ironically, the effort to produce rural handymen was tried several times in colonial times in development centres in Zambia and in Uganda – it failed partly because it anticipated the real growth of rural incomes, only now beginning to gather headway, partly because certificates and qualifications and trade tests crept in. It could perhaps succeed now.

The simplest and cheapest form of vocational training would be the establishment of workshop/class-rooms in large villages or semi-urban centres, running extremely simple short courses (perhaps eight weeks) to improve simple carpentry, masonry, and mechanical skills for young potential 'fundis'. Teaching could rest on one all-round instructor plus part-time instruction from local trained men. (The pupils would have to find lodging near by.) Such centres would be established *only* in areas where purchasing power was already rising with successful agricultural development, so that demand for such services could be confidently assumed. A few pilot schemes of this

¹ Moshi will take in-service trainees alongside its secondary technical work. (This decision is subsequent to the programme laid out in the five-year plan)

nature might be worth while as a start.¹ Such centres might also be associated with simple forms of apprenticeship, like those developed in the Kilimanjaro Region. Community development staff or the *Kumi-kumi* organization² could possibly help in placing apprentices, especially where they had taken the local craft-induction course. In west Africa apprenticeship of this type is playing a considerable part in launching young men into a trade.³ In Guatemala successful experiments have been made with even more limited help by using a mobile instruction team with a vehicle carrying tools; this stays only a few days in a village and helps local craftsmen and the farmers themselves.

Simple commercial classes are a companion piece to craft training; but the organization could be both cheaper and simpler, since relatively little equipment is needed and a single instructor could cover the range of skills. It could also be done part-time in the form of day or evening classes by an itinerant instructor covering five centres in a small radius in densely populated areas. Something very much shorter than the 'C' grade teachers' course might be enough to train instructors for this type of work.

Failing opportunities for immediate employment or training, youth-club activity with an occupational content can be extremely valuable. The Young Farmers' Club which has its own plot, visits successful farmers, learns such skills as calf-rearing and bee-keeping, and has an occasional visit from a knowledgeable lecturer, can be a highly successful organization.

The simplest 'evening class' activity (not necessarily in the evening) is surely the appropriate approach, at this stage, for a rural economy, both to precede and to be far more widespread than formal technical training. The new Unesco attitude to literacy training may prove extremely relevant here – but not the non-functional adult-literacy campaigns on which so much community-development effort has been spent. If employment in secondary activities servicing a successful agriculture is to be important for the rural surplus labour force, provision must be made, and made locally, to assist it.

¹ The Tanzania five-year plan (volume II, page 109) states that 'a number of (Voluntary) Agencies will be encouraged to provide properly equipped craft training centres'

² The Tanu system of establishing one contact/leader per ten households

³ See A. Callaway, *Development and adult education in Africa*, Uppsala, Scandinavian Institute of African Studies, 1965

Ages 12-18 : the educational vacuum

What are African children and teenagers from 12 to 18 supposed to be doing ? In the traditional system there were customary patterns for their activity, including initiation, which marked sexual and religious maturity and assigned social duties and relationships. In the developed countries all are at school until 15 or 16; many thereafter start work, often with additional training. If we keep the Tanzanian example, and assume that most children who reach standard IV leave at 12 or 13, standard VII/VIII at 15 or 16, the numbers in the six age groups 13-18 inclusive would be distributed very roughly as shown in Table 5, assuming 250,000 to each age group.

TABLE 5. Educational breakdown of the age groups 13-18 in Tanzania (in thousands)

<i>Ages 13, 14, 15</i>		<i>Ages 16, 17, 18</i>	
Never in school	360	Never in school	360
Already finished (standard IV) at 12 years	240	Standard IV only completed	240
In upper primary school	150	Standards VII/VIII In secondary school	135 15
Total	750	Total	750

This means that there are 600,000 children in the age groups 13-15 who never entered school or have finally left it, of whom two-fifths have had education up to standard IV; and 735,000 teenagers, 16-18, out of school, of whom over half have had education up to standard IV (240,000) or standards VII/VIII (135,000). Over half the total education budget each year for six years has been spent on their education.

As far as the younger group is concerned, policy would (if possible) at least seek to retain literacy and some educational influence on the group that had only finished standard IV, in whom a large investment has been made. The majority of parents, from an earlier generation, are bound to be illiterate, though able to do much for their children in traditional ways. For the huge numbers involved, clearly (indeed, by definition) no further full-time formal schooling or training is at present possible, for lack of recurrent revenue. But to leave these children - so alert, so malleable, so responsive to any educational influence - without any further guidance or organized activity is surely catastrophic. Compared with the waste of human potential, the fact that the standard IV leavers will mostly revert to illiteracy, wasting a very large monetary investment, is almost trivial. In developed countries, where the adult population is better educated, both parents and part-time

paid or voluntary workers could be mobilized to meet such an emergency. Traditional tribal culture in Africa – which had its educators too – is no longer able to teach an entry into the modern world. But there are the beginnings of a modern African culture – the village-development committees, the community-development workers, *animateurs* in French-speaking Africa, the members of political parties, a scattering of nurses and medical assistants, junior agricultural staff, chiefs and leaders, master farmers, men who have at some stage had teacher training or craft training, the churches (now more African than hitherto), and Boy Scout movements and Young Men's and Women's Christian Association branches. Out of this community, with some but not great financial aid, could be organized a service of continued contact and stimulation for children – even if it could take charge of them for only three or four half-days per week.

Surely this is a duty which a modern African government could lay upon communities as such. Once started, however raggedly, experience and enthusiasm would find the successful methods. Already, in the more prosperous areas, parents' associations have done much, though normally through the formal school system; *Harambee* schools in Kenya have mushroomed, often at heavy cost to parents. The need now is to organize and help, and to divert the direction of effort away from gaining extra academic 'standards' (which nourishes illusions of paid employment) and into the practical activities which nourish awareness of the local environment and its possibilities, develop physical health and skill, and promote everyday uses of literacy.

For the older age groups, action is no less urgent, but perhaps easier to conceive. Quite a large group are ex-standard VII/VIII. Here the Young Farmers' Club, pre-farming training, youth or national service, evening classes and many other activities are relevant. Opinion is against immediate farm settlement – these young men have neither the physique nor the experience of the difficulties of unemployed life to settle successfully. It is not only the standard VII/VIII teenagers who can be helped, but many of the ex-standard IV, if there has been some contact in the years 13–15. Schemes which have become old history in Europe – the Danish Folk High Schools, the mechanics' institutes, old-fashioned family apprenticeship – all have a relevance in this, the early stage of transforming African social life from a traditional to a modern culture. As post-standard-VII/VIII training schemes disappear through the raising of entry standards, as discussed above, so for political, economic, and social reasons – and above all, from common humanity – some substitute effort to help and train these young people is demanded.

Conclusions

This paper has traversed a wide field very lightly, leaving on one side huge questions (such as the market for increased rural output !), touching only briefly on others each of which demands research and a book to itself. There are moments – and perhaps this is one of them – when a subject can only be seen clearly if the whole social and economic context is painted in. Indeed, it is part of my thesis that the separation of educative services – formal education, agricultural extension, community development, co-operatives – and, indeed, Unesco/FAO/ILO – is in part responsible for a kind of self-contained planning, which is ‘co-ordinated’ only by the treasury’s financial cuts, not by a common vision of total needs. The further separation of education as a whole from the economic ministries – labour, industry, agriculture – reinforces this separatism, which only the cabinet could control.

The central theses of this paper are, I hope, clear. First, that the educative services as a whole are out of balance, and that far more weight needs now to be put upon those which directly stimulate the rural economy. Second, that in selected zones of potentially rapid agricultural advance a new range of simpler training is needed, not only for the farmers themselves but to prepare a wide range of derivative employment. Third, that attention must now be given to the 12–18 age groups.

In terms of educational planning the implications are formidable. They include strict control of the expansionist higher level; use of the secondary level for a considerable and rapid expansion of many types of agricultural extension; new and really large schemes of training (which must be simple, short and inexpensive) for youth leaders, instructors at the simplest level of craft, commercial and functional literacy teaching; development of community effort for continued education of children; the inducement of foreign donors and voluntary agencies to direct their aid to this level; and later a controlled expansion of at least four years of education for an increasing proportion of children as the ‘follow-up’ organization begins to grow. The financial implications of such a programme are inescapable. But it does not have to be attempted all at once; it should be applied purposively and selectively as the agricultural programme begins to succeed. It is that programme which will in fact provide both the finance and the employment opportunity.

The larger implications also need emphasis. The growing gap between élite and people, and the actual destruction of the bridges between them, is politically menacing. Moreover, the type of urbanization which is threatening must be foreseen. In studies of urbanization now being made through INCIDI (International Institute of Differing Civilizations), there is a growing stress on the differences between the industrial town of developed countries and

the 'refugee' town of developing countries – the former giving productive employment, the latter being a refuge from rural poverty and stagnation that creates a crushing burden of social expenditure, an expenditure that is still never enough to prevent squalor and is unmatched by productive effort. East Africa has not yet seriously suffered this effect; but it will do so if the rural environment is not developed faster.

Finally, the cultural vacuum in which older children live must be recognized, and filled. Right across Africa huge sums are spent in helping children in their first few steps toward a new world. Then, before they are old enough to do without it, the helping hand is drawn away. If the state is too poor, the local community, with help, must reassume the duty of initiation. Through the desiccated official language of papers such as this there must still shine a vision of the human reality – the liveliness, the thirst for education, the vigour and potential of young Africans, today blunted and wasted by a society which has not yet found a way to develop them.

African agriculture and its educational requirements¹

The present near-critical situation

In the report of a 1959 mission of which I was a member, it was suggested that there might be a famine in India about 1966. This was not said lightly or by chance. It was a sober forecast whose truth is now a reality the Indian nation faces.² Even after two favourable monsoons (1964 and 1966), there was a harvest of only 88 million tons of food grains as against the 110 million tons India would need to feed her population austerely but reasonably. In 1965, a severe drought reduced production to 71 million tons, compared with the 110 million tons required.³ India, however, is not alone in its plight. In the emergent future – perhaps before 1980 – the situation may become almost as bad in all of the under-developed countries.⁴ According to the latest annual FAO report, the *per capita* world-food-production curve has ceased to increase since 1959. While

¹ This article was written after reading Guy Hunter's *Manpower, employment and education in the rural economy of Tanzania*, Paris, IIEP/Unesco, 1966. Since I am in broad agreement with what Hunter has set forth in his paper, I have concentrated on other aspects of the general problem

² G. Coldwell, R. Dumont, M. Read, *Community development evaluation mission in India*, New Delhi, Government of India, November 1959. We predicted, as did the United States experts of the Ford Foundation, that under existing policies India would be short of 28 million tons of food grains towards the end of the third plan. This is the approximate shortage, for an average of one good (1964) and one bad (1965) harvest

³ The requirement was for 500 million inhabitants. It took into account the needs for sowing, industry and livestock. Moreover, these cereals and legumes constitute an abnormally high proportion of the ration, while losses in the fields and in storage (by such predators as monkeys, rats and insects) are excessively high

⁴ R. Dumont and B. Rosier, *Nous allons à la famine* (Famine next), Editions du Seuil, November 1966

output in the rich countries increased by 4 per cent *per capita* from 1959 to 1964, that of the poor countries decreased by at least 3 per cent *per capita*.¹

According to an estimate of the United Nations Economic Commission for Africa, the population of that continent increased by about 2.5 per cent per annum between 1959 and 1964 against an increase in food production of some 1.7 per cent per annum. In certain places, like the Ivory Coast, the picture shows signs of improving, but in others it is worse. Since independence, marketed agricultural crops in Dahomey have fallen off by 10 to 50 per cent, while, during the same period, total agricultural production in the Central African Republic has fallen by perhaps 5 per cent. In Algeria, from 1960 to 1964, agricultural production in the modern sector (self-managed, by former colonials) seems to have decreased by 40 per cent. East Africa, on its part, is periodically subject to terrible droughts (1961 and 1966) that result in severe famine.

Schooling, agricultural progress, and the population explosion

Most Africans go to school hoping that when they leave they will not have to take manual jobs; they often look upon work with their hands as being servile and degrading. This attitude is further compounded by the awareness of the excessive disparity between civil-service salaries and farmers' incomes (apart from some rich planters, particularly on the west coast). A farmer thus feels that his son has a better chance for a better life if, through schooling, he can go into the civil service, politics, business, or the liberal professions, in the urban areas where these are generally located, instead of becoming a skilled farmer, anxious to modernize his agricultural venture. Actually, a high proportion of the primary-school leavers, in Nigeria for example, have ended up unemployed.

This economic disparity – and the tendency it fosters to look down on the peasant – is particularly serious in view of the fact that Africa, because of a population explosion, is confronted by an arduous task unprecedented in history. On the one hand, production in general and food production in particular must increase much faster than population in order to overcome

¹ It is also worth noting that these are official figures; in some cases, they may reflect a governmental tendency to present statistics in a light which may best serve domestic political considerations

nutritional deficiencies, especially in proteins, mineral salts and vitamins.¹ On the other hand, it must cut down on food imports, whose costs prevent Africa from equipping itself with the means of economic progress. To increase food production will require special efforts, particularly in those areas where the basic food still consists of tubercles, such as manioc, and yams, and bananas. There must be a changeover to leguminous grains (vigna, vondzeia, ground-nuts, beans, dolichos) and especially animal and horticultural products.

Still, while agriculture must have increased attention – particularly in food production for internal consumption – it will be difficult to bring this about without reducing the excessive difference between urban and rural living standards. The latter must be given a better position and status relative to the former. But how can the rural dweller's standard of living be improved quickly when, left to his own devices, he so slowly increases his productivity? The answer is a policy of greater investment in agriculture, coupled with a policy of austerity that will reduce public expenditures on the urban front – and hence provide savings for use on the rural front.

Agriculture's need for improved skills

Unfortunately, high public expenditures and too little investment are at present a major obstacle to African economic development. According to Samir Amin public expenditure represents 35 per cent of the gross national product in Algeria; in Tunisia it represents 28 per cent, and he estimates it will increase there twice as fast as production.² Rather similar figures could be found in many countries in tropical Africa.

Amin is of the view, and on the whole I agree with him, that agricultural progress can no longer be based on administration-founded co-operatives where the traditional community – villages and enlarged families – is used as a starting-point for such co-operatives.³ He believes that speedy agricultural progress is more likely to happen through the breaking up of the

¹ It is said that under-populated Africa must have a fast increase in her population. Yes, but only if it can increase production even faster, and this has generally not been the case, at least not in the last seven years. This in turn means a drift toward catastrophe

² *L'Economie de Maghreb*, Editions de Minuit, Paris, 1966

³ 'Chana, Guinea, Mali', *Tiers-Monde*, Paris, Presses universitaires de France, 1965

traditional groupings, whose chiefs are mostly too old to accept readily the upheavals or, as Austruy remarked, the 'scandals' of modernization.¹

A start could be made by selecting leaders in every village who would make those around them aware of the advantages of change. The hope of a rapid expansion in agricultural production will be hard to realize as long as the meaning of progress has not become a reality which the peasant can see with his own eyes. Village leaders in modern farming have so far been mainly viewed as people who 'animate' their communities. Like Amin, I should prefer to think of them as model farmers and dynamic entrepreneurs who, by example rather than by words, show that it is possible to make money by farming well.

If a large enough group of these modern farmers were eventually established in every village, they could, for example, form the basis of credit unions which would ensure the repayment of agriculture loans by collective guarantees. Further, by forming co-operatives with voluntary membership, they would enhance the prospects for success in their efforts, and thus would attract the larger farmers to the credit unions and co-operatives. With all this under way, there would be a greater local predisposition to listen to the agricultural instructor² when he suggests radical and important changes in agricultural techniques, such as new crop rotations or new lines of stock-breeding. But even before the dynamic farmers appear, the agricultural instructor might still be listened to in matters where simple operations can have immediate repercussions, as in the protection of crops against insects and disease.

Of course, the higher executives – the planners, investigators and educators – are indispensable in the agricultural battle that must be waged. But future success will not depend primarily on them. It will depend primarily on the progressive farmers and village agricultural instructors – the minor executives and non-commissioned officers of the agricultural battle – whose present failure or near failure in their critically important role seems all too common, so much so, that a number of African governments, particularly in French-speaking Africa, have gone so far as to bring Europeans in to replace them. Why? It cannot be asserted that these European minor executives are better suited for their job because they possess a fund of superior technical knowledge: agricultural instructors are taught in a few hours or days all they need to know about improved techniques for, say,

¹ According to a survey by the Bureau for the Development of Agriculture Productivity (BDAP) in the high valleys of Niger, and Mali (1963), the average age of chiefs of villages and enlarged families were respectively 70 and 60 years

² Guy Hunter calls this officer the Field Assistant

ground-nut cultivation or cotton crops. Besides, in contrast with their African colleagues, the Europeans are seriously handicapped initially by their almost total lack of knowledge of the native African language, mentality and customs.

It is puzzling, therefore, that a number of African governments should prefer these Europeans. When it is explained that they are more conscientious and work harder, their African colleagues come back with the claim that the Europeans are better paid. So they are. But the inference that better pay would lead to harder work does not necessarily follow. It is worth noting that, with some happy and distinguished exceptions, salary increases won by Africans due to rapid promotions after independence did not generally lead to an increase in African work-yields. But however the problem is resolved, one thing seems clear. It is that in the final analysis, the rural awakening – the readiness for development, the acceptance of change and the desire for innovation – is essentially a moral and political matter. It is also a matter of coming to terms with the fact that progress in the rural sector is even more difficult to make than elsewhere.

Early sowing the starting-point for progress

Cotton sown on 1 June in the savannah zone during the short rainy seasons (e.g., Tikem in Chad, near North Cameroon) frequently yields 800 kg of seed and fibre per hectare without manure. Other conditions being equal, yield falls to 400 kg if sown on 1 July, to 100 kg for 1 August, to nil after 15 August. Every farmer in the Central African Republic can verify this with his own eyes. None the less, in 1965–66, the yield of cotton was only 26,000 tons, against 40,000 before independence. All that was necessary to reap double the quantity was to sow thirty to forty days earlier and there was nothing to prevent it except the peasants' inertia.

On the basis of early sowing, the country could have been well stocked and the peasant would have been encouraged to work. New techniques (utilizing insecticides or manures) would have been profitable, which they never are with late sowing. With annual savannah crops, the date of sowing can represent the bottle-neck in agricultural progress. No expert knowledge is needed to popularize the most favourable date, which by now is well known to everybody. For the whole of tropical Africa the problem of how to induce the peasant to sow early is, therefore, more important and more urgent than the question of modern techniques, whose very success depends on it. The improved techniques themselves are usually very simple and can easily be learnt on leaving primary school. The lesson in the case of cotton,

for example, would be this: sow at the right time; sow disease-free grains at suitable intervals in properly prepared ground; weed three times, early; scatter insecticide four or five times; harvest before cotton is spoiled; pick and dry it.

All this instruction can be imparted in a small pamphlet, more than half of whose pages would be devoted to pictures. It would provide the essential basis for future improvements such as linked crops, the use of manure first and of chemical fertilizers later, the setting up of fodder reserves, improved breeding for milk and meat production, and so on.

The essential turning-point would be to induce the village community to make the all-important decision to sow early. This applies also to basic food crops such as sorghum, savannah millet, rice, and ground-nuts.

The economic return on education in rural areas

In advanced countries, it seems incontrovertible that education leads to a high economic return. But I would like to see a more precise evaluation of the educational yield in the rural communities of tropical Africa. Here, more than half of the primary-school leavers are unemployed, the burden of the administrative apparatus and public expenditure hinder general development and the peasant still wants his son to become an official.

In the case of tropical African agriculture that lacks common animal energy and is still close to the neolithic age, it is risky in the extreme to model rural schools blindly on those of twentieth-century England or France. The wider age pyramid and low work yield make it necessary for the young to be drawn into the production process at an early age. France and England, at the beginning of the nineteenth century, had workers of 6 to 9 years of age. If Africa is to avoid the same mistakes, general education from 6 to 18 including apprenticeship will not be feasible for a long time to come. Hence, general education must be combined with vocational training, particularly in agriculture and the skilled crafts, for the large mass of school children who will not continue their studies.¹ The seven-year primary course

¹ The Mali weaver who must train for a certificate of professional qualification after his general studies does not want to return to his village and despised profession. One month of concentrated professional training which can be given even to illiterates would in this case be sufficient. Education of the French type is much too expensive and, in the long run, not applied

must teach them the rudiments of their future job, mainly agriculture, and occasionally a skilled craft.¹

This will require a school garden, which is feasible everywhere, coupled wherever possible with an orchard and a small stock-breeding farm. It is generally more feasible to have small fields where improved techniques of food crops and industrial crop production can be practised with selected varieties of vigna, ground-nuts, sorghum, millet, yams, and cotton, and, according to place, with small plantations of model types of coffee, cocoa, bananas, and coco-nut palms. Staggered sowings in close lines would demonstrate in a startling fashion the vital importance of sowing dates. If the child who is still open-minded retains nothing from school but this one fact – and thus an increased confidence in the agricultural instructor who is one of the teachers – the main battle would be won. For when that same child became a farmer, he would continue to be a learner for the rest of his life.

The work of the children could one day provide the school canteen with vegetables and fruits containing vital mineral salts and vitamins, while honey, leguminous grains and eggs could supply the proteins. Later on, as production increased, it could help pay for school supplies and, if increased even further, for part of the educational costs.

A great obstacle to such a suggested project, or to similar ones modified to suit specific situations, is the widespread bias in favour of a general, abstract, humanistic uniform education for town and country alike. The rural child subject to it is bound to outgrow his family and village background and will be tempted by what is for him the rather unreal life of the town. He, too, will want to live there, to become one of the 'jacket-and-tie privileged' who can exploit farmers. What he will find, however, is unemployment in shanty towns or a condition of dependence on a civil-servant cousin. Agriculture, meanwhile, deprived of the more educated elements, will go on stagnating. An African who more or less consciously encourages such trends bears a heavy responsibility for holding back his country's progress.

To put the case positively, two things must be done. First, all political, religious, traditional and trade-union authorities in the new countries should concert their efforts to raise the status of the farming profession. Thus presidents, ministers and civil servants of all ranks could spend time labouring in the fields, if work on the land is to gain the renewed status Israel, for example, succeeded in giving it.

¹ [Most symposium participants took the view that, while the rural-primary-school curriculum and methods should be oriented to the children's environment, it was not feasible to provide agriculture vocational training in primary schools. See, for example, page 198 – Ed.]

Secondly – and this should be of central concern to the International Institute for Educational Planning – an entirely new kind of training must be given to the teachers who are to be in charge of completely new schools. This is why in 1963, we proposed the creation of new teacher-training schools for future rural instructors, whose work would differ from that of urban instructors and teachers.¹ Let me go back to that project and make some modifications on its original form.

A new concept, the rural teacher-training school

The rural teacher-training school has a chance to succeed only if it is never viewed as a 'cut-rate' offering. Teachers graduating from such a school must have guarantees that pay and job opportunities will be at least equal to those of their city colleagues. I have already suggested – in vain – that in Africa the man in the bush should be better paid than the city worker, the technician, or the administrator. The best among these teachers (provided they continue to study) could become primary inspectors, teaching cadres or directors of teacher-training schools. They could also become sub-prefects with precise functions and authority.² None would be in a better position to know rural life, with its hopes, needs and possibilities, and the best way of administering the countryside and of leading the people onward.

Once this essential premise is accepted, there remains the problem of teaching cadres for these teacher-training schools, and perhaps, at a later date, higher rural teacher-training schools. It might be possible to by-pass the latter problem since the teachers of present secondary and teacher-training schools, assisted by agronomists, agricultural engineers and local veterinarians, could provide a suitable teaching body. If so, this might bring into question the need for or the very concept of rural higher teacher-training schools. In any case, I feel it is not possible to plan a basic change in rural primary schools without establishing new teacher-training schools and, even more important, without a new spirit calling for an education fundamentally different in approach and mentality from the one that now prevails. In the

¹ R. Dumont, *Agricultural development, particularly in tropical regions, necessitates a completely revised system of education*, Conference on the methodology of Human Resource Formation in Development Programmes, Frascati, Unesco, June 1963

² Proposal by Thomas Balogh in R. Dumont, *L'Afrique noire est mal partie*, Editions du Seuil, 1962, page 194 (English translation, *False start in Africa*, published by André Deutsch 1966)

early stages, the village's agricultural progress must be viewed as being more important than examinations. The teachers will have to be mainly concerned with the majority who will not go beyond the primary school rather than with the minority who will.

Respect for manual labour and the labourer must be the foundation-stone on which the new structure of education is built. The future teacher will be more willing to work with his hands during training and later in his school orchard if he is of peasant origin and, particularly, if the high dignitaries of the country set an example. The new teacher must be skilful with hoe and axe like an old peasant. His reputation will depend as much on his garden as on his academic success. He will also have been trained in the new methods of cultivation – not necessarily in an abstract way, since the principles of chlorophyllian assimilation are not indispensable to a farmer's development, but in practice, which can also be very scientific. Then will be the time for the battle against insects and diseases, for linked crops, manure and hay-making, lines of animal husbandry such as poultry, bees, and dairy goats in enclosures or in sheds At the same time, in order to be successful, only fairly well-known operations should be attempted – and always in co-operation with the village instructor, the man of practice.

Under such a system the school teacher and the agricultural instructor would have so similar a training that it might be considered feasible for both to be trained in the same college. Upon being recruited at the termination of the first stage of secondary schooling, they could have the same curriculum for two years and then be separated for more specialized studies for one, and later, for two years.

The teacher-to-be would study the general concepts he will be teaching, along with methods of primary-school teaching. The future instructor would receive a more extensive training in applied agriculture, in teaching methods which apply to adults, and in related matters which would give him a socio-psychological understanding of the local peasant background. The same school might later include other courses, for example courses designed to develop managers of co-operatives and agricultural credit unions, or future leaders of rural progress centres. In any case, these schools would be concerned only with local problems such as traditional crops or lines of animal husbandry or those which could profitably be introduced. Teachers and instructors, receiving all their training in the same region, could know and master its problems. They would be required to attend refresher courses periodically.

The future farmer's educational requirements and the question of free schooling

Rural primary-school education must be extended to the greatest possible number of future farmers if it is really to prepare children to take up modern farming and not channel all of the best elements into the cities. Some of the brighter elements must remain in the country to help organize the peasants, to teach them how to protect their interests if they are subject to abuse from urban centres, to arrange credits, marketing facilities and technical improvements. There is, in general, an unlimited professional outlet for sons of peasants returning to the land in Africa generally (though the case is different in south-east Asia). The lack of technical knowledge is even more of an obstacle to agricultural progress than the lack of capital. Capital and equipment quickly go to waste without the know-how. This agricultural knowledge, however, must be given to those who are determined to use it, and, since there is no lack of outlet, much more of it must be quickly given.

The cost of education is another stumbling-block to development in the very poorest countries, like those which stretch in savannah lands from Mauritania and Senegal to Chad, and the arid or semi-arid areas of East Africa, or the still poorer savannahs of central Africa. The costs of training more teachers and instructors is part of that same financial problem. But the situation could be quickly remedied if several lines of action were taken. One is by reducing the building and maintenance costs of schools, which could well be simple straw-covered sheds fenced in on either side by quick-set hedges, which stop lateral winds without preventing the entry of refreshing breezes. Second, teachers' salaries could be reduced after the salaries of other civil servants were reduced by comparable amounts.¹ Indeed, under the impact of such a reduction, civil servants would be strongly induced to get their governments to try to cut down the costs of living by tackling such problems as real-estate speculation (rents) which favours intermediaries. Or again, the civil servants would be induced to form co-operatives. Austerity would generally force them to display more astuteness in the management of their affairs.

If rural school farms are well run, they would provide considerable revenues above their costs. If they are badly run, it would be better not to have them at all – since they would become the object of mockery by old peasants. Hence it would be wiser to hold in suspense the creation of such farms until

¹ [Several participants doubted the feasibility of altering salary structures through reductions; see, for example, page 251. – Ed.]

such time as competent teachers and other pre-conditions for success are at hand.

Lastly there is the problem of free schooling. In France this only came about after a certain stage of development had been attained, and most African countries are not anywhere near such a stage. In general, in the very poorest countries like Chad and Niger, schools can expand quickly only under a system based on fees. Peasants could pay school fees with labour – in the construction and repair of schools, working on the land or in the school garden. They could also pay the fees by supplying certain products for cultivation or stock-breeding. In parts of English-speaking Africa, the need to pay school fees apparently induces peasants to produce more and to farm better. It represents, in my view, an irreplaceable factor of agricultural progress. It would be better to exempt from school fees only the very poorest social strata; unlike the position in French-speaking Africa today, where everyone is exempt, including dignitaries, big farmers, owners of fishing concerns and, above all, officials and merchants.

In general, the system of scholarships could start at village-school level for the children of the poor, on condition that they make an effort to study and are not allowed to continue if they show lack of aptitude. If one considers that Niger in the recent past spent almost a quarter of its total revenue on providing primary schooling for no more than 6 per cent of its children at school age, it is apparent that premature free schooling on a European model can lead to self-defeat.

The need for direct agricultural instruction within the village communities

In a large savannah village – with a predominant agricultural population of about one thousand – about ten rural leaders should be trained during the first five years at a near-by centre. Here they would attend a four-to-five-week seminar, supplemented every two years by three-to-four-day refresher courses. There should be one such centre for every 150,000 inhabitants in the rural population; and with a seminar having about thirty participants, it should be possible for each centre on a four-to-five-week basis alone to train 300 leaders annually, or 1,500 in five years for the surrounding population. The costs of training, an essential factor, could thus be kept low, while the number of centres required could be computed by dividing the total rural population of a country by the rule-of-thumb figure of 150,000 rural inhabitants to be serviced by each centre. The same savannah village mentioned above should soon be given – within five years if possible – an agricultural instructor who would be responsible for

150 to 200 agricultural families.¹ His technical qualifications must be adequate for the work expected of him, but even more important among the factors which make for effectiveness, would be his devotion and his respect for the peasant's dignity and labour.

The planning and operational structure above the instructor could consist of one work supervisor per five instructors; or, more often, of five specialized officers (agriculture, stock-breeding, agricultural engineering, marketing and co-operation) for every twenty-five instructors (as in Senegal's rural-expansion centre). Planning engineers would be added later to this structure. They would be in charge of such matters as regional development, production planning, classification by priority of different types of technical operations and financial decisions.

Higher education: bilingualism and the africanization of research

The rural teacher-training schools could have short training courses for agricultural teachers and, later, longer courses for specialized supervisors. The best instructors – those who worked well and tried to improve their qualifications – could become supervisors.

It is impossible to found in each of the rather small French-speaking countries of Africa a true higher education where schools would be linked with a proper research centre. Nor can this be done, with the exception of Nigeria, in the English-speaking states. An inter-country university, therefore, seems highly desirable. I can picture a savannah agronomy institute at Bambey in Senegal, attached both to the Bambey agricultural station and Dakar University. A forestry institute would find its natural location near Abidjan and be linked to Abidjan University, near the Adiopodoumé research centre. Other institutes for the whole of central Africa could be attached to Elisabethville and to Lovanium near Léopoldville; Madagascar next, and only then the Cameroon and the UDEAC (Union douanière et économique de l'Afrique centrale) group in the case of French-speaking Africa alone.

At this level of education, a certain bilingualism would be highly desirable, with everybody knowing both English and French. This might help to offset the balkanization of Africa in which the language factor plays an

¹ This agricultural instructor would receive a more modest education and would cost much less in salary and travelling costs (travelling by motor cycle, say) than the extension officer in English-speaking Africa mentioned by Hunter

important role. With bilingualism, there could be a close association between agronomists of the groupings of English- and French-speaking countries: first in education, which might one day extend up to doctorate level, and then in research about common problems.

Professional knowledge must be at its best at the level of higher education and scientific research. Hence, in the immediate future, it will be in the hands of non-Africans, mostly expatriate Europeans. Hence, too, as quickly as possible it will be necessary to educate Africans so that they will themselves be capable of filling these posts. The dearth of African élites, which will continue for some time to come, means that their members will go to responsible positions first in politics and later into management of economic affairs. In technically complex economic affairs, however, we have seen how much damage premature africanization can sometimes do. The Ivory Coast, aware of this, continues to this day to entrust its state plantations to European technicians. It should none the less be possible to pass on more quickly to Africans the job of plantation assistant and technical director. As with the agricultural instructors, the real point seems to be much more a question of discipline, dedication and conscientiousness than of technical knowledge.

Tentative conclusions

The great needs of African education – an emphasis on moral qualities and a change of outlook – are difficult to achieve. To bring them about takes a long time, as was true in the case of Europe. Yet there is a difference in the urgency of the time factor. Europe was not ‘trapped’ by the need for rapid progress as Africa is today because of her population explosion. It is at the level of African political leadership, therefore, that there must be a rapid change of outlook.

Here colonialism continues to linger and everybody still tries too much to copy Europe. What is needed is development which fits reality – in other words, a development on specifically African lines. In education, new concepts must prevail, and primary schools must be made to participate in the agricultural progress as quickly as possible. If this can be done – and I believe it can along the lines outlined above – the cost of education would soon be amortized and schools would soon represent a good economic proposition. The activities of agricultural instructors, if supported in every village by a sufficient number of leaders and progressive farmers, would become effective faster and pay their way sooner. A 5 per cent tax on harvest proceeds would often suffice to pay for personnel costs and expenses involved in the initial marketing efforts of the first groups of co-operatives, provided these groups

become the responsibility of local leaders and are run more efficiently and economically than they would be by the government.

A close link will have been established between the school and 'its' village, between the teacher and the instructor and 'their' peasants. The school, having become a meeting-place, a centre of development, will soon be held in general esteem.

All this depends on a crucial need: to rehabilitate an interest in work on the land, and to enhance the prestige of the modern profession of farming. This will be difficult, but on it depends the survival of Africa.

Colloquy

Virtually all the papers prepared for the symposium had something to say about the relationship between rural development and educational planning, and the subject cropped up at every turn of the discussion. The immediately preceding papers, however, made the subject the heart within the heart of their respective texts. They thus served to give a sharper focus to the discussion about educational planning, both with respect to the general argument about rural development that marked the symposium and to the specific questions put to the participants by the Chairman.

Was there, in fact, a need for a rural transformation to go along with an industrial revolution? Which comes first? Was it more important at the moment to industrialize or to avoid starvation? Was it possible to bring about a trade-off that would favour 'educative services' for the rural areas - including bringing agricultural extension into the educational circle? Does the development process make the rich richer and the poor poorer because of a growing disparity of income between urban job-holders and rural inhabitants?

Are we prepared to state an order of priority between formal and non-formal educative services? What changes, if any, should be made in the rural primary school curriculum? Does the educational system promote a 'brain drain'? How does the case stand with respect to investment priorities? Do we squeeze agricultural savings for urban development (including government buildings) or do we attempt to divert some funds, from the modern sector, for agricultural development? What skills are required for rural transformation, assuming a will to go ahead with such a transformation? Is the need for trained manpower as great or greater than the need in the urban sector? Is the problem of rural transformation as difficult or more difficult than the problem of organizing industrial projects?

WILSON What I would like to say stems from a background of long association with the practical problems involved in the transition from peasant subsistence land use toward viable systems of economic farming in East Africa.

Throughout this experience I became increasingly convinced of the key role which education and training must play in the whole field of rural transformation. Not only is it necessary to develop satisfactory technical services for agricultural improvement;

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it is essential to generate within the people themselves – and particularly the rural community – the desire for change, the desire for progress and the willingness to work hard to achieve it, and the desire to grasp the tools of technology for improvement through the medium of education and training.

Perhaps 90–95 per cent of the life and occupation of the people in the developing countries is rural. Agriculture, for these people, represents the central fact of existence. Yet, with certain notable exceptions, like irrigation projects, capital investment in the improvement of the agricultural potential of subsistence land areas in these countries has been practically nil. Indeed, under their current land-use patterns – with fragmented holdings, common land use and common grazing – the improvement of the land by capital investments in the form of human skill or money is hardly possible. Peasant agriculture might be regarded as the 'depressed industry' of these countries. It means an endless round of toil, suffering the hazards of the weather, and of pests and diseases of crops and livestock, to say nothing of unpredictable fluctuations in prices for agricultural products. It means miserably poor returns even in good years. It means an agriculture in which in many places in the last three or four decades production per acre and per unit of labour have remained static or have actually declined.

Meanwhile, because of population pressures, standards of living – as measured by food per head or cash income per family – have actually decreased in many of the developing countries. We are, as Dumont has quite rightly stated, facing an absolutely critical situation. On the one side – to repeat – agriculture is the basic occupation of the developing countries (and of mankind as a whole); upon its development depends the world food supply and much of future progress in all sectors of society. On the other side, in most of the countries we are now talking about, agriculture is looked upon as an occupation in which the poor and the unprogressive will be retained – and from which the intelligent and the educated must escape. Yet it is precisely this basic industry which is in greatest need of people trained as scientists, technicians, extension workers and more efficient producers.

In this situation, education, by itself, is powerless to do very much. If education is to pay off, the development of modern economic agriculture must be at the forefront of national development policies and plans. It is absolutely useless trying to create among school children a love of the land and an interest in going into farming if agriculture – as in many developing countries – simply is not worth going into. Education for rural development must, of course, go hand in hand with policy

changes outside the specific sphere of education. Land reform, for example, is an essential prerequisite to an improved agriculture – simply because most forms of modern economic farming cannot take place except in farming units of viable economic size. Besides, there must be created institutions for the supply of farm credit and there must be developed a wide range of other support activities – marketing facilities, transport and access roads, food-processing plants, co-operatives, and so on.

The fruits of a determination to create a new agriculture can be seen today when we look at what Israel has done. It can be seen retrospectively when we look back at the Morrill Act of 1862, which set up the land-grant colleges in the United States – at a time when the U.S.A. was, basically, a subsistence farming economy. It can also be seen in the agriculture of Japan and many of the advanced countries. It is only within the context of a determination to create a new agriculture that agricultural education and training can really begin to make a significant contribution to economic and social development.

What sort of agricultural education and training are needed, given this determination? The obvious and simple answer points to an education and training which will lead to positive, substantial and sustained increases in agricultural productivity – and in farm-family income. Within this broad framework, we may identify three types of necessary education and training.

First, there is the training of the farmer, or the potential farmer, and other producer occupations. Incidentally, in some of the countries we are speaking about, there has been a strong shift of emphasis toward training practising farmers – even if they are illiterate – as opposed to spending great sums of money on training potential farmers, most of whom do not in actual practice go into farming.

There is, secondly, the training of the intermediate or skilled technician, manager, or extension worker. The aim here is the acquisition of practical skills and managerial ability backed by a sound basic and technical education. In essence, it is training of an applied, practical kind, geared to the performance of specific jobs.

The third type that is needed is at the professional or university level. It must be geared to the production of scientists, agriculturists, veterinarians, foresters and others for research work, for teaching, for senior administrative posts in the agricultural services; people who can direct the work of agriculture at the policy-making level, and so on.

All three types of training are essential to agricultural progress. But the notion that one is inferior to the other – and hence should be avoided if possible by students – has led to many unfortunate

WILSON
cont.

situations in the developing countries. For example, the diploma type of training at the technical level is commonly thought to be something inferior to the training at the professional level of university work which leads to a degree. This is an unfortunate impression. The two types of training are fundamentally different in character. Their aims are different. The types of person produced are meant for different – but essentially complementary – functions. In other words, you cannot get agricultural progress without substantial numbers of both types of personnel, and particularly without a very much larger number of the technician than of the professional, university-trained type. Yet the common impression is that, if you hold a diploma qualification, it is something inferior to the university degree and that you must spend the next few years applying for scholarships that will enable you to go on to a university in order to get a full and proper qualification for work.

From the point of view of the developing countries, this kind of wrong thinking is very costly. It is precisely the skilled, practical managerial type of people who are so desperately needed to spur economic growth in the agricultural sector of the developing countries. This fact has been recognized by the East African Council for Agricultural Education, representing the ministries of agriculture and education, the different levels of agricultural training, and the agricultural industry and research. The council was so convinced of the complementary importance of the diploma and the degree type of approaches to agricultural development that it persuaded the university to sponsor an East African diploma in agriculture awarded by the university. In this way, it was hoped that high standards would be achieved and status accorded to the diploma level of qualifications.

Where does the primary-school system fit into the thesis I have been advancing here? I repeat that I see no point whatever in trying to orient the primary-school system toward rural life and farming unless agriculture is assigned a very high priority in the development of the national economy. Besides, the primary school is not the place to teach technical agriculture. It is the place to give a basic education to children, naturally geared to the environmental conditions of the countryside, its needs, economic development and so on. But this is something quite different from teaching agricultural techniques to small children in schools.

Turning briefly to the question of incentives, here again there is a lot of very loose thinking. It seems to me that the things that really matter to people are first of all their families and the future of their families; secondly, the education of their children; and thirdly, improvement in their living conditions and social amen-

ities in the form of better housing, domestic water supplies, and so on. If this is correctly stated, then it is incredible that we have managed to get so far in this symposium without ever having mentioned women's education. I am not going to open up that subject now. But, having worked just over thirty years in Africa, if I were asked what is the most important single factor in transforming the economies and the life of African countries, I would say women's education. I say this because it is women who are most immediately concerned with the basic 'incentives' that motivate societies.

A final word. It is misleading to adhere to the division usually made between the industrial sector and the traditional agricultural sector – as if they were independent entities. What we need is the industrialization of agriculture. Here is where agriculture and industry must come together. The future of industrial progress, whether in the towns or rural areas, is, in most developing countries, inevitably bound up with raising levels of agricultural productivity and a steady increase in the creation of wealth from the soil.

DUMONT When I am told that we cannot teach agriculture in the schools, I do not believe it. The first stages of agricultural development are easy to teach. For example, it is easy to teach the fact in tropical zones that an early sowing date will lead to better returns later on. On the other hand, if schools do not wish to teach agriculture, they will continue the anti-agriculture tradition and continue to foster a hatred of manual labour. There are different levels for the work of popularizing agriculture, and for the adoption or adaptation of techniques which are time-saving and money-saving. They can be dealt with in the schools, through simple points of attack, provided we know which are the most important.

HUNTER I was delighted with many of the things set forth by both Wilson and Dumont. Here I can perhaps usefully and very quickly make clear some of the things which I did *not* say in my own representations, in case it is assumed that I thought them. First, I have not said that we should revolutionize the formal educational system for the sake of agriculture. I agree with Wilson that educational changes are pointless until agriculture is producing a proven cash income to its practitioners. Secondly, I did not say that we should decrease the effort to industrialize. We should press on with every industrialization venture that can actually increase national income. Thirdly, I did not say there should be more direct cultivators on the land. Indeed, I think there should be fewer. But the cultivators on the land should be more productive. More productive cultivators – not more cultivators on the land – will mean more

HUNTER
cont.

purchasing power, enabling them to employ people at a level of the manpower scale like blacksmiths and lorry drivers. They will thus provide the additional employment that is needed among non-cultivators.

Fourthly, I did not urge less education. I called for an education tilted to what I called the educative services.

As to more initiative, I would make only one comment. I think that if there is a lack of initiative in Africa and in south-east Asia it is because the opportunities for initiative are not of the kind which people of these countries can take advantage of. If the proposal is to create an automated factory, then there are very few Africans who can take an initiative to do it. But if the proposal is to start some small trading, a workshop or a lorry system, there are many Africans who can take, and have shown that they are capable of taking, the initiative – provided that the range of initiative is within the range of the society whose development we are considering.

Finally, I want to add a word in support of Dumont's advocacy of research in his paper prepared for the symposium [see Part III, page 181.] This is a more serious point because it ties in also with Harbison's remark that 'we should be careful not to get too frightened by the enormous complexity of a fully developed agricultural system'. I am most grateful to him for that remark. He is right in noting that a fully developed agricultural system is an immensely complicated matter. It requires a lot of resources, manpower and money. But there are a great number of things to be done for agriculture in the developing countries that can be done without enormous resources and can be done at once. Dumont has given us some details. I would add that, in south-east Asia, a number of Philippines experts went to Thailand to discover why the Thai rice production was so much higher than the Philippine rice production. The Thais said to them: 'Well, we go to a very excellent rice research institute which is situated in your country.'

Research by itself does not produce agricultural change. If one had to rank the things which did, education would probably come first. Next would come 'facilities' – by which I mean adequate systems of land tenure, proper use of fertilizers, and the like. After that, research would assume an increasing importance, as attitudes changed, as people began to try new methods and new crops, and when, let us say, perhaps 10 per cent of the existing knowledge which was not being used was already being used.

CHAIRMAN

From what has been said so far, it appears that much of the present investment in rural primary education is of dubious value, either because the schools have failed to teach what

WILSON

they should or because the environment is not of a kind that can make education pay off. There is agreement among us that some sort of major educational effort is needed in rural areas but there is no clear agreement about the exact type. It appears also that an all-out effort in agricultural education entails a substantial, preparatory process. Dumont, however, suggests that there is an intermediate stage of education for relatively simple actions within the existing educational framework. He disagrees with others that agricultural training cannot be given in the primary schools. In short, we seem to agree on broad propositions but diverge on specific proposals. The approach to rural development does imply a much closer and continuous relationship between ministries of education, agriculture, and health, and other separate interests - which are not always complementary. The same need applies to international organizations like Unesco, ILO, FAO and bilateral arrangements between countries. They have not succeeded in integrating the potential sources of assistance. In any case, however, all of us in the international organizations are external to the picture. We can only offer advice and technical and financial support. Whether the suggestions are adopted, and how they are carried out, is the responsibility and right of the country involved.

BHALLA

I believe that agricultural development should be distinguished from rural development. The latter is more comprehensive and includes non-agricultural or industrial activities which many of the developing countries are now trying to promote in small or medium-sized towns in order to reverse the trend of migration to the big cities. This distinction also bears important implications for the assessment of specific manpower requirements for the so-called 'traditional' sector. In estimating the training requirements for this sector, we should be aware of the phenomenon of multiple job-holding that prevails in most rural areas of the developing countries. Farmers are also sometimes weavers and petty tradesmen. Package training schemes of the nature of 'cluster-type training' in India should, therefore, be considered also for the traditional sector.

CHAIRMAN

What is the state of the art in defining manpower requirements for rural areas?

RICHTER

The ILO has for many years been carrying out manpower assessment projects in developing countries. Emphasis in these projects has so far been placed on determining the availability of and the requirements for skilled manpower in the industrial and modern sector. However, efforts are being made to include the traditional or rural sector in manpower assessment work as well. In view of the well-known difficulties involved in fully and

RICHTER quickly assessing manpower needs in the vast rural sector of
 cont. developing countries, we want to concentrate on identifying
 the needs and requirements for key categories of rural manpower.
 Two important obstacles stand in our way. Firstly, statistical
 information on rural manpower in developing countries is at
 present inadequate and, secondly, manpower experts coming
 from the developed countries have often little experience in the
 manpower aspects of rural and agricultural development.

THOMAS In Tanzania, this is not the case. We do identify these rural
 skills and all skills in government that bear on rural activity.
 We count them. We make training plans for them and we imple-
 ment them. They are not always called 'manpower', but our
 survey identifies all people with any real degree of skill and
 training. We cover everybody from cotton-gin mechanics, motor-
 vehicle mechanics, book-keepers, co-operative managers, and
 community-development officers to assistant officers. We have
 all the agricultural and veterinary research people in every
 research station in Tanzania, as well as all extension officers.
 We have the administrators. We have the economists. We have
 the clerks. We have the timekeepers. We have the rural school
 teachers. I will make no claims for what is contained in anybody
 else's manpower survey, but ours covers the whole works.

RAO With respect to the broad questions put to us by our Chairman,
 I must first acknowledge that Indian educators for many years
 generally failed to come to grips with the needs of India's agri-
 culture. But this does not say that nothing has been done about
 upgrading agricultural manpower. India's attitude toward agri-
 culture in the last twenty years was shaped by a thesis all of us
 in the developing countries were taught – and which I still think
 is correct. It is that economic development primarily meant
 industrialization; that, with the exception of Denmark, the *per*
capita income of countries seemed to vary almost directly with
 the proportion of the labour force employed in industry; that,
 unless you went in for industry, you could not really bring about
 any significant increase in economic development.

We should have treated this thesis not so much as an axiom
 but as a truth full of contingencies. None the less, along with this
 interest in industrialization, we launched a great and varied
 number of agricultural programmes in India, which led to
 substantial increases in agricultural production. What we failed
 to do was to modernize agriculture and not just a few farms – to
 transform the entire agricultural economy and the entire rural
 population. I can only say that this is not an easy job in the case
 of India. There are about 16 million farms in my country, and
 the total rural population is in the order of about 300 million
 persons.

I will not deal here with the many pre-conditions that must be set in place before the desired transformation in agriculture can be brought about. I will confine my remarks to the way education can help bring about the desired transformation in agriculture, and will draw on what we have done, propose to do, or should do in India proper. The first step in modernizing agriculture is to acquaint those already in it with the profits of modernization as well as with the constituent elements of agricultural education. To this end, you want an educational programme that must embrace a vast number of adults between the ages of 18 and 40. They must be instilled with the idea that agriculture can be much better than their personal experiences with it have been so far.

This calls for a different kind of extension work from one which is purely of a technical character. The technical kind of extension service assumes a self-confidence on the part of the rural population, and then goes on to say, 'You must do this, you must do that.' What is needed first of all, however, is precisely the self-confidence that has been assumed but is actually missing. It is the need to educate our farmers into a feeling of the possibilities of agricultural dynamism – by telling them what has happened in other countries and by telling them what has happened within the country itself, which, in the case of India, already has many examples of very vast increases in agricultural productivity. The second thing to be done is indivisible from the first. We must have a vast programme of functional literacy for the rural adult population. This does not mean just reading, writing or signing one's name on a document. It means a good follow-up programme of book production and distribution through village libraries. It means films and audio-visual equipment and a vast campaign to show the farmer that he can be much better off than he is today – to show him this, not merely in theoretical terms, but by citing concrete cases. Stir his curiosity and we will get his self-reliance.

There is another thing that should be done at the adult level. In India, we have set up a number of rural extension schools, based to a large extent on the Danish folk schools, where adults between the ages of 18 and 30 come to spend a year. I was very much impressed with a school of this kind which I recently visited. The students are real farmers, and in the year they spend at the school, they are taught a great many things about all phases of farming. Then they go back to their villages. Moreover, one of the good things done by this institution – which should be done by similar institutions in other parts of the world – is that they keep in touch with their ex-students. The ex-students meet once a year or once every two years; they have a journal;

RAO and the ex-student farmer can always come back to the school
cont. and ask questions. You can call such schools by whatever name
you like – rural people's colleges, people's schools, extension
schools. But let them serve as places where mature people who
are real farmers can come and stay a year and learn how to be
better farmers.

Yet another thing that should be done on the adult level ties in
with the reference Wilson has made to women's education. In
India, we are placing a tremendous stress on women's education,
and special allotments are being made for the purpose. There are
special problems connected with the staffing and housing of
people who can go into the villages in order to carry on the work
of women's education. But there is no doubt in my mind that
women's education makes a tremendous difference for the trans-
formation of agriculture.

I have been speaking so far about the education of adults. But it
is important to take in the new generation if agriculture is to be
transformed. With respect to primary education, I agree with
Wilson that primary schools cannot be turned into agriculture
schools. At the same time, Wilson will probably agree with me
when I say that primary schools can and must be used to give
children an idea of their environment and the power of science
over nature. In fact, if you want to transform the rural areas,
you must impress the child with the power of science over the
things he thinks are 'natural' and unchangeable. This can be
taught in the primary schools. We must try, through them, to
construct the kind of background which will spark the dynamic
impulse of agricultural improvement.

Besides the foregoing, under India's fourth plan, we are now
setting up what we call junior agricultural schools. The details
have not yet been worked out, but the schools are intended for
the sons of farmers who have completed their elementary educa-
tion up to the seventh class, who do not intend to go any further
with it but will go back to their farms. The schools will teach the
subject of agriculture in all its dimensions – the history of
agriculture, agricultural inventions, agriculture as a business
and investment, agricultural experiments in other countries,
agricultural chemistry, agricultural engineering, and practical
agricultural techniques.

In a related but different direction, we want to put forward the
idea of what we call an 'agricultural polytechnic'. 'Polytechnic',
as a term, has been mainly confined to the sphere of industry.
But we think it should also embrace agriculture and find expres-
sion in the training of people who have completed their higher
secondary education or who wish to become agricultural assis-
tants. The programme would provide them with some training

in agricultural engineering, agricultural chemistry, soil chemistry, practical work and so on. They would be exactly like the diploma-holders in the case of mechanical and electrical engineering. As agriculture itself becomes more of a paying business, there will be an increased need for agricultural polytechnics and their graduates.

On a rung above the agricultural polytechnics we have our agricultural colleges. Several of them exist in different parts of India. But they pose a difficulty in terms of their student population. In nine cases out of ten, the young man who comes to an agricultural college is not a farmer but someone who wants a professional job when he graduates. How can you make him understand the practical problems of agriculture? One way is to give each student in an agricultural college a plot of land which will serve him as his training ground and a laboratory for experiments. But that is where another practical difficulty crops up. Each agricultural college needs between 500 and 2,000 acres. Yet we find that it is extremely difficult to get as much as 20 acres – all because of high prices and the terrific pressure on the land. In this respect, the African countries are much better off than we are.

Recently, however, I put forward an idea in India that was generally welcomed. It was to take a whole block of villages – a 'block' in India consists of seventy to eighty villages treated as a unit for agricultural and planning administration purposes – and to wed the block to an agricultural college. The college then has the responsibility of looking after the agricultural programmes in the block of villages, and the students of the college work with the farmers in order to help carry out the agricultural programme. This arrangement is now under way in India, and its success requires a generous measure of dedication on the part of the students and the head of the agricultural college. Where this dedication is present, the arrangement has worked beautifully.

On a rung above the agricultural colleges are the agricultural universities. They came into existence as 'land grant' institutions, modelled after the land-grant colleges in the U.S.A., and they have technical affiliations with a number of U.S. universities. Some of these Indian agricultural universities – and especially the one in Ludhiana – are absolutely first class. One of the things these universities are doing is calling in farmers for 'courses' lasting four or five days. The time is spent not on general lectures but on such matters as explaining a new seed to the farmer, crop rotation, and the use of fertilizers and pesticides. The university and the farmers are thus brought into close and continuing contact with each other. Thus, too, the clientele of the

RAO
cont. university is not just the student body regularly enrolled in it. The farmers and the lands of the outlying farming communities are also part of its clientele. The problems of the farmer are brought to the university, the university goes out to the farmer, and the whole of agricultural education becomes infinitely more interesting and at the same time more intimately related to the work done in the class-room.

Lastly, I want to say a word about research, and the importance of bringing research into the class-room. Here there are two problems. How do you identify the subjects of research that are of the greatest importance to the farmer? Having decided that question and completed the research, how do you communicate and get into circulation the research that you have done?

You will quite often find that, if you correctly answer the first question, you almost automatically answer the second one. For this reason, a number of agricultural colleges and universities are establishing small centres in different districts and blocks to collect information about the problems of concern to the farmers. The information becomes the subject of research, and the findings are carried back and tied in with the work of the farmers. Yet I am by no means satisfied that we have mastered the very important subject of communication in agriculture. The difficulties of communication with the farmers – and especially when you are dealing with such vast masses of people as in my own country – are quite different from the problems of communication one faces in the towns.

WILSON You have asked, Mr Chairman, whether the present institutional structure of education was really adequate to produce the different kinds of trained people at different levels to meet the needs of transforming agricultural and rural society. I would say that, although in many countries there is an existing structure, it must be greatly modified to meet very rapidly changing circumstances. If you take, for example, the traditional intermediate-level training in Africa's English-speaking countries, with their certificate courses and the diploma courses – mainly geared to producing extension workers – I would say that much of their training is, in fact, not directly related to the tasks to be performed.

Very considerable changes are taking place now and will take place in the future with regard to the kind of extension man you need for a change in the agricultural situation. It was Hunter, I believe, who pointed out in his paper that extension workers in the past were mainly purveyors of government orders or instructions. Their role is bound to change to that of advisers, innovators and helpers to the farming community; this is going to have a marked influence on the kind of training they must get.

For example, most of the older college courses with which I am familiar, offered practically no training at all in communication. Nor were they organically connected with the extension services, which were administered quite separately. The people teaching at these institutions had no direct connexion with the problems of farmers and farming development.

I think the approach to agricultural-extension work is itself also going to undergo very great transformation. In East Africa, for example, perhaps the most important arm of the extension service has been the newly emergent farmer-training centres which offer short-term training for farmers, for farmers' wives, and for a great many other people – including in-service training for field assistants who are engaged in extension work with farmers. In 1964, there were twenty-seven farmers' training centres in Kenya and they put through about 30,000 farmers, farmers' wives and others in that year. Some 50 per cent of those who attended the courses, of about a week in length, were women. These farmer-training centres, furthermore, are now being supplemented by mobile units which go among the farming community. Groups of farmers – perhaps forty to sixty at a time – come to these centres for a week's course and they come in with the extension worker who is working in their area. All such new patterns of extension work are going to influence greatly the type of training extension workers will need. Hence, there will be a very great need to bring all existing training facilities into line with modern requirements.

I have a further point to make. There has been a very great tendency – and it has been increased by bilateral aid – to fragment agricultural training. Either with government or with bilateral aid, for example, a centre for training veterinary assistants will be set up in a certain place and as a small institution. Fifty miles away, you get another small institution training forestry assistants at the technical level. A hundred miles away you get an agricultural training institution. Somewhere else, you get some people being trained in co-operative management or community development. Now this pattern has emerged fairly recently. External aid is partly responsible for it because many of the donor countries wish to see projects in developing countries with which their countries can be identified. The result is that the recipient countries are being saddled with a proliferation of middle-level training institutions that are isolated and confined to specialized subjects – institutions that tend to be under-staffed and under-financed and probably beyond the capacity of the country to keep them going properly once the external aid has been withdrawn.

The situation calls for a very careful look at what the training

WILSON
cont.

needs are, and how they can be met in, perhaps, one or two central training units. Rao has spoken about the agricultural technical institutes. I presume that is the same concept as the one I have in mind. We must ask ourselves: how can the different training needs be gathered together in an institution with common facilities, a common administration, common libraries, and which can be something that adds to the prestige of agriculture?

We have a great deal of work to do in setting up and revising a sound institutional structure for coping with the training needs associated with the new forms of agriculture that we envisage. It is my own view that the university faculties of agriculture can and should play a much more important role than they have so far in the work of assisting the development of agricultural training at all levels

HARBISON

Beware of the external donors, for they are the ones who will make you go broke. I know of a case where four different veterinary medical-training centres have been established in an area where there are no cattle. Their total student enrolment will be seventy-five. At the same time, vast amounts of money will be expended to develop whole medical faculties. Three different American universities are pushing three out of four of these separate pilot faculties. All are ignoring the recruitment costs on the countries accepting the aid and the maintenance costs that will follow.

CHAIRMAN

From the remarks made in this discussion, it seems, as Robert Maynard Hutchins once remarked, that it is harder to move a curriculum than it is to move a cemetery. But at least we seem to be agreed that education clearly has a more important role to play with respect to agricultural development than has been accorded it so far in many developing countries. Second, we seem to be agreed that education is not likely to play its full role unless national policy gives it a chance to do so. Third, we seem to be agreed that, if national policy gives education a chance to play a full role in agricultural development, existing institutional facilities will not be able to meet the diversified kind of manpower required for an agricultural transformation. They will be able to meet those requirements only if existing educational institutions are recast to a marked degree. Finally, it seems evident that it is hard to find anything in the educational picture with respect to rural development that has not been tried somewhere. But, unfortunately, these experimental projects seldom have built into them evaluation arrangements which can produce useful lessons for others from the successes and failures.

IV Implementation

- R. L. Thomas Implementing a manpower programme in a
developing country
- A. R. Jolly Employment, wage levels, and incentives

Colloquy

Implementing a manpower programme in a developing country

Introduction

This paper describes the actions taken in Tanzania to implement a manpower programme launched in late 1962. It is too early to observe the full results of that programme, but wherever possible an attempt will be made to evaluate the effectiveness of the measures thus far taken.

Whether or not the material to be presented is relevant to non-African countries, it is very relevant to all sub-Saharan, newly independent African countries. The reason lies in the important characteristics they share in common. All these countries have an abundant supply of raw labour. Largely unskilled and predominantly illiterate, the bulk of it is engaged in subsistence agriculture with a low level of productivity.

These countries are poor: *per capita* incomes range from \$60 to \$120 per year. Their population is very young: in general, 50 per cent are under the age of 16.

The demand for skilled and highly educated/trained manpower had grown sharply just prior to or at the time of independence, whereas the supply of African manpower of this sort was extremely small and the educational/training pipelines had relatively few Africans in them. The preponderance of jobs above unskilled manual, operative and low-grade clerical level was in the hands of non-Africans. In consequence, all these countries were heavily dependent upon expatriate (and in East Africa upon resident Asian) talent. Most of the skilled personnel vital to development and which they needed so badly (e.g., engineers, agricultural scientists, physicians, good top administrators, etc.) were in world-wide short supply.

It is the thesis of this paper that programmes designed to solve these common manpower problems of the new African nations must involve an integrated effort by educational and manpower planners, for such programmes (and their implementation) will necessarily contain elements of concern to each of these professional groups. Our concern here is to examine these elements, particularly as they relate to implementation. At the outset, however, it will be well to define three frequently used terms that might otherwise cause misunderstanding.

The first of the three is the term *manpower programme*. Many major elements

in the typical economic-development programme directly affect 'manpower' and are designed to improve its status. But they do not ordinarily carry the manpower label and are dealt with directly by people other than the manpower planners. In Tanzania's specific case, the whole of its economic development plan (and programme) has a manpower objective, for its cardinal purpose is to raise the individual standard of living of the country's citizens primarily through a fuller, more skilful and effective use of human resources – in the modern and traditional sectors alike.

Here, however, we will focus primarily on those elements upon which the manpower and educational planners operate fairly directly, and we will consider a manpower programme to be one which does three things. First, it gives a top priority to the determination – within the framework of a broad programme of economic development – of existing and projected demand/supply relationships in all those skills whose creation requires the heaviest investment of the nation's time and money. It plans and sets in motion actions which are designed to produce these required skills in as rapid and economic a manner as possible – within the context of the nation's limited resources and other developmental claims. It measures the effectiveness of these plans and actions in terms of their success in meeting the skill requirements established.

The second term, *high-level manpower*, is subject to the misconception that it applies only to a few occupations in the top ranks of administration and the professions. As used by manpower planners, its actual application is far wider. Thus to facilitate the planning of educational and training institutions, demand and supply information on all high-level manpower occupations is usually broken down into three broad categories:

- Category A Jobs normally requiring a university degree.
- Category B Jobs which normally require from one to three years of formal post-secondary (form 4) education/training.
- Category C Jobs which normally require a secondary-school education as a foundation for standard performance of the full array of tasks involved in the occupation. This category includes the skilled office workers and the skilled manual workers in the 'modern crafts' (those involving precision metal-working, electricity and electrical machinery). The specific job skills are normally acquired on the job.

It is important to note that the basis for the above grouping relates solely to the way in which the occupational skill or competence is obtained – whether in schools and institutions which must be financed by public expenditures, or by the employing establishment on the job. If this basis for occupational grouping is not clearly understood, it leads to the confused notion that the

three categories represent a rigid grouping of occupations by three different skill levels, with A the highest, B next and C the lowest. They do not. After all, who is to say that a site superintendent (Category B) is not as skilled as a surveyor (category A)? A debate as to the relative levels of skills among these accomplishes nothing. Indeed, in a number of instances a good case can be made that the category C occupation involves considerably higher and more complex skills than a specific job in category B.

The third term, often misunderstood, is *manpower planner*. Very often the 'manpower programme' is viewed as consisting only of those activities which are performed by the manpower planner. In reality, the manpower planner is merely the individual who is the focal point for analysing the over-all problem and for formulating the strategy to carry it out. He also performs the 'see-to-it-that' function of having the proper things happen at the right time, in the right way, in the proper sequence, and to or by the right people. But by far the greater part of the work of making up a manpower programme is performed by other individuals and organizations – in government or in the private sector – most of whom are probably unaware that they are at all involved in a 'manpower programme'.

Policies

In Tanzania the various policies governing the formulation and implementation of the nation's manpower programme can be seen as coming under the broad umbrellas of two 'master' policy decisions.

The first is the policy of Tanzania to achieve essential self-sufficiency in manpower at all skill levels by 1980 (adopted by the president and cabinet in 1963 as a part of the draft for the five-year plan). The second – taking into account the scarce resources of a poor country – is to invest in education only to the degree to which it contributes toward the skills needed for Tanzania's programme of economic development.

These two master policies lead to a wide range of specific policies in the development programme. For example, a top priority in the allocation of resources goes to increasing secondary and higher education, and to increasing science and mathematics instruction at both levels, as against instruction in 'arts' subjects. Again, a freeze in the expansion of primary education during the five-year plan provides for only the same proportion of places in relation to age group in the fifth plan year as prevailed when the plan was initiated. (This was roughly 50 per cent of the age group.) By another policy, government bursaries are directed almost exclusively to those courses of education/training which will provide the occupational skills the country

needs in order to carry out its planned development and to meet the goal of self-sufficiency by 1980.

Other policies are best presented in the context of the discussion about the implementation of the manpower plan, following an intervening word here about the pre-conditions for implementation.

Pre-conditions for implementation

The process of human-resources development as a conscious, deliberate, managed effort is so new that there are few precedents to look to in the search for success. Inertia and even active resistance to change abound on the part of many people and organizations important for the implementation of a manpower programme. Administrative machinery and processes in new countries undergoing strenuous expansions in social services and economic activity are often far from perfect. The variety and number of these factors pose great difficulties for manpower planning. But, if the implementation of a manpower programme is to have an optimum chance for success, certain pre-conditions are essential. They are:

1. The highest political leaders and government administrators must understand and support the manpower programme.
2. The manpower programme should be related to a plan for economic development; it should cover the same time span and be in harmony with the main features of the plan in its scope and priorities and dimensions of elements related to skill requirements.
3. The manpower-planning function should be an integral part of the total planning organization; the latter, in turn, should be positioned so that no organizational levels intervene between its chief officer and the chief executive of the nation.
4. The manpower programme must proceed from a survey of high-level manpower requirements expressed in specific occupational terms – referring, say, to civil engineers, agronomists, and physicians – and not in census categories such as ‘professional’, ‘administrative and executive’, ‘skilled’, ‘clerical’. On the other hand, once individual occupational requirements are established, they should be arranged in broad categories that can be equated (however roughly) with levels of educational output. This is in order to make sure that the development plan provides for the investment of the necessary resources in education and training, besides providing the educational planners with a workable base from which to take off.

The process of implementation

Balancing supply with demand through the schools

The whole system of formal education (primary, secondary forms 1-4, senior secondary forms 5-6, university) is closely interrelated and interdependent. Because this is so, actions in educational planning and manpower implementation (which begin to look suspiciously alike at this point) must take into account the whole educational system. This is especially the case for the form-1-to-university output. In Tanzania the volume of primary output is so large in relation to form 1 intake that no quantitative 'feeder' problem into form 1 has yet been experienced. Some qualitative problems, however, may be on the verge of emerging.

Form 1 intake must be adjusted to produce a desired form 4 output four years later, taking into account wastage along the way and the effect of the quality of teaching upon the examination results at the end of form 4. This in turn will determine the supply of students who are qualified for admission to the higher secondary level (forms 5 and 6) which is the route to university.

Three factors operate here. They are the wastage; the total anticipated number of students who will pass the Higher School Certificate examination at the end of form 6; and, of vital importance, the numbers of those who will pass the Higher School Certificate examinations with a science bias (essential to university admittance in the faculties producing persons for the occupations based on 'hard' science/mathematics) and of those who will pass with an arts bias. Since the most critical manpower shortages are in the science/mathematics-based occupations this is a crucial element in the implementation process.

Category A occupations

Tanzania has addressed itself with energy and ingenuity to the problem of occupations based upon university-level training. Since independence (9 December 1961), it has brought into being the University College of Dar es Salaam, which forms one of the three campuses of the University of East Africa. The total enrolment of Tanzanian students on all three campuses is currently (spring 1966) about 600, but is expected to reach about 1,000 by July 1966, and 1,500 in the last year of the five-year plan, 1968/69. There seems to be little doubt that the latter figure will be achieved. The ministry of education has done an outstanding job of managing the expansion of the whole educational structure to meet its quantitative targets almost

TABLE 1. Tanzania school system for higher-education enrolments: inputs and outputs 1961/62-1968/69

Category	1961/62 First year of independence	1964/65 First plan year	1966/67 May graduation July entry	1968/69 Plan targets (estimated)
<i>University of East Africa (Makerere)</i>				
Tanzanians entering	¹ 85	178	408	² 624
Tanzanians graduating	³ 56	89	160	408
Total Tanzanians enrolled ⁴	205	600	1 000	1 500
<i>Senior secondary 5 and 6</i>				
Total enrolment	485	1 079	1 640	1 960
Africans	—	833	—	—
Others	—	246	—	—
Enter form 5	286	666	840	1 080
Finish form 6	199	462	606	1 080
Qualifying for entry to University of East Africa	203	278	414	626
Science	112	113	181	² 359
Arts	91	165	233	² 267
<i>Secondary 1-4</i>				
Total enrolment	⁵ 13 690	⁶ 18 818	⁷ 21 670	26 000
Total entering form 1	⁵ 4 810	⁶ 5 302	⁷ 5 915	6 755
Total finishing form 4	⁵ 1 990	⁶ 3 630	⁷ 4 900	5 915

1. Approximate

2. Plan targets

3. Annual Report, Ministry of Education,
1962, Table V

4. University entry July, graduation May

5. 1962

6. 1964

7. 1966

exactly during the first two plan years. Every sign indicates that it will also meet the highly ambitious total five-year-plan targets by 1968/69. Table 1 provides additional data concerning the considerable growth in secondary, senior secondary and university inputs, outputs and enrolments. The Tanzanian government pays all expenses of virtually all the students eligible for entry (qualified by Higher School Certificate examination) to East Africa University. Up to and including the school year 1963/64 wholly unguided student preference prevailed with respect to choice of course, and only a handful emerged each year in the most-needed specialized occupations (secondary teachers, agronomists, engineers, and so on). But, before the start of the school year 1964/65, the government notified East Africa University that hence forward Tanzania intended to support bursaries primarily

in those faculties in which the education would produce the skills most urgently needed for its programme of development. After some discussion, the university agreed to deal on this basis and provided places accordingly. Students who had qualified (by Higher School Certificate) for entry to science faculties were offered choices among courses, at the university, leading to science/mathematics-based occupations and a few were sent overseas for some courses needed by the country but not given at East Africa University, such as dentistry and forestry. One half of the bursaries open to students who had qualified for entry to the arts (non-specialized) degree courses were offered on the condition that the recipient took his 'minor' in education, thus qualifying him for employment as a graduate secondary-school teacher. The approach has undergone great improvement since the process was first set in motion. The president of Tanzania made a major policy statement explaining the national need, the reasons for the country's decision to allocate such a large share of the total educational finance resources to such a few students (a cost of £3,000 per student for the three years), and the obligation of the beneficiaries of such a major sacrifice to repay the nation by acquiring the skills the country so desperately needs. This theme continued to be reiterated by all top political leaders. Further, students were provided with detailed vocational-guidance information. Headmasters and career masters initiated extensive discussions with the students about the skills the country needs, the nature of work involved and the rewards and benefits involved. Students were carefully consulted about their preferences among the various subjects for which bursaries would be made available. All students recorded three choices in descending order, stating their reasons. These were given the fullest weight possible by the ministry of education in making the bursary offers to the students. An analysis of the documents (students' preference forms and allocation records) reveals a high correlation between the students' choices and the bursary they were awarded. Thus 87 per cent received bursary awards for their first or second choices. The profound change which this policy has brought in the contents and 'mix' of the University of East Africa can be seen in Table 2 (page 218). In addition to lending a guiding hand to the production of needed skills through the University of East Africa, the government provides positive direction in respect of overseas scholarships.

This is done in two ways.

In the case of certain needed skills for which the university has no facilities, the government awards overseas bursaries to a relatively small number of students, otherwise qualified to enter East Africa University, if they wish to undertake training in these skills.

Second, by far the largest number of overseas scholarships are offered by bilateral aid agencies and international organizations. Prior to, and for the

TABLE 2. Supply estimates of inputs and outputs in the University of East Africa for the period 1963/64-1968/69

Year ¹	Engineering							Arts teachers	Residual liberal arts ²
	Civil	Mechanical	Electrical	Medical	Agriculture	Veterinary	Science teachers		
Estimated inputs									
1964/65 ³	13	2	1	18	8	4	8	56	50
1965/66 ⁴	20	20	15	25	20	10	23	89	89
1966/67	38	6	4	34	30	16	42	103	46
Estimated outputs									
1963/64 ⁵	3	—	1	8	3	3	1	5	—
1964/65 ⁵	2	1	1	7	3	3	—	6	—
1965/66 ⁵	7	4	2	6	4	2	1	6	—
1966/67	13	2	1	18	8	4	8	56	50
1967/68	20	20	15	25	20	10	23	89	89
1968/69	38	6	4	18	38	16	42	103	76

1. Plan years coincide with school years

2. Under 'Estimated inputs' the figures given include law

3. Controlled bursary scheme started

4. Request for places made November 1964

5. The outputs are the result of inputs from 1961/62, 1962/63, 1963/64, prior to Tanzania's controlled bursary scheme. Contrast these outputs with those resulting from the inputs for the year 1964/65 onward

— Magnitude nil

first years after independence, these overseas scholarships were offered and accepted with little co-ordination by the Tanzanian government, and often with sterile employment results for the recipient students. Hence, in October 1964, the government set up under the chairmanship of the principal secretary of the ministry of education a civil servants' advisory group to the cabinet committee on higher education. The group advised, and the cabinet agreed, on steps to apply the same kind of positive direction to overseas-donor scholarships as were applied to East Africa University. The ministry of external affairs would inform all foreign embassies, consulates and donor organizations that henceforward all offers of scholarships must be made directly to the government of Tanzania itself. The government would then review, accept and award them to selected students, depending on whether they would lead to the skills needed for development. To date, the co-operation of donor nations and organizations has been excellent. Since January/February 1965, when the advisory group's approved scholarships programme became operative, it has had two positive effects on the

advancement of Tanzania's programme to increase high-level human resources. For one, Tanzania has been able to control and reserve its limited supply of form 6 output for East Africa University in accordance with national policy. For another, it has been able to tap an additional supply for university-level inputs, since a great many donor countries will accept, for university entrance, form 4 people and form 6 completers who fail to qualify for entrance to East Africa University.

Beginning in the school year 1963/64, all students accepting government bursaries to the University of East Africa have, as a condition of receiving the bursary, agreed to work for the government for five years after graduation, unless released from the obligation by the government in order to take other employment. The motive here bore on the need to implement the government's decision substantially to africanize the public sector as soon as possible and prior to the private sector – and, in addition, to gain financially from replacing expensive expatriate incumbents with much-lower-cost Tanzanian talent.

The arrangement has not been an onerous one from the graduate's viewpoint. The government has offered a wide variety of challenging jobs at very good rates of pay by local standards. There has been much leeway to move around within government and up to this year the opportunity for very rapid promotion has been much better than it will be for many years in the private sector as a whole. Also, the government has agreed to releases where the private sector's 'offering' employer has a post of particular importance to fill.

There has been an important key to student acceptance of the government's policy to offer and provide 100 per cent financial support to higher educational/training opportunities primarily in the fields where the nation's most urgent skill needs lie. The key has been the compilation of the first comprehensive body of occupational/labour-market information and its intensive use by secondary students and their career masters. Thus in late December 1964 the book *Careers for nation building – a careers guidebook for secondary school students* was completed and a supply of copies was placed in every secondary school in Tanzania and in the hands of all headmasters and career masters. It described in detail about one hundred of the principal occupations in nine broad fields of work, representing the country's chief high-level skill requirements. A strong policy statement by President Nyerere appeared at the beginning of the book, addressed to the students and explaining their obligation to equip themselves with the skills needed by the nation – and pointing out those in the guide that fell into that category. With a clear statement of national policy to guide them, together with access for the first time to detailed and specific information on the world of work, students have been able to select careers more rationally.

There are limitations in all but the largest nations upon the variety of courses that are or can be offered in the universities. Students in all of these countries must select from that which is available, unless they can finance their own education in some other country. This option is also open to Tanzanians. But those who look to the government to finance the full cost must perforce choose among the courses the government will support in the light of its skill needs. As the government of a very poor country with the most pressing claims for investment for development in all other sectors, adoption of any contrary policy would be unrealistic and indefensible.

This appraisal becomes more meaningful if the category A occupations are subdivided into three groups, as in Table 3. The 'estimated supply' column is based on the assumption that the plan's secondary-school outputs are met (as they show every sign of being) and that all present policies and measures to expand supplies (as mentioned above), are continued in force. The first, second and fourth columns of this table appeared in the 1964 high-level

TABLE 3. Demand/supply outlook for category A (university-level) occupations in Tanzania ¹

Occupation	Five-year requirement (1964 survey) ²	Estimated supply (1964 survey) ³	Estimated supply (March 1966) ³	Estimated shortfall (1964 survey)	Estimated shortfall (March 1966)
Science/maths-based occupations ⁴	1 437	841	676	-596	-761
Other occupations requiring special training ⁵	943	599	649	-344	-294
Occupations open to entrants with non- specialized degrees ⁶	525	522	431 ⁷	-3	-94
Total	2 905	1 962	1 756	-943	-1 149

1. From the *Survey of the high-level manpower requirements . . .*, 1965, op. cit., page 13, with revisions to March 1966

2. Over-all requirements remain relatively unchanged. The supply outlook is the principal variable. The major change involves the revised lower estimate of the science/mathematics-based outputs (third column). This is due to inability to generate as yet the planned 4:3 ratio of science to arts Higher School Certificate holders

3. Supply estimates include both East Africa University and overseas universities

4. Engineers, scientists, doctors, etc.

5. Graduate teachers, social workers, lawyers, etc.

6. Administration, government, business executives etc.

7. The drop in this category of supply results from a higher 'wastage' (no-returns) than was estimated in 1964 in respect of students in universities overseas

manpower survey.¹ The third and fifth have been added to indicate the estimates as amended on the basis of the experience of the first two plan years.

It is particularly encouraging to note the progress which will be made in some occupations that have posed the greatest problem in the recent past. From outputs of graduate teachers, in the past few pre-plan years, of from four to six annually, it is expected that about 334 will be produced by the end of the five-year plan or an average of about 111 per year for the three years susceptible to plan actions. (The inputs yielding outputs in the first two plan years were already in the pipelines when the five-year plan was launched, and thus were beyond the control of the planners.) In the engineering field, where in the past several years only a trickle of supply has become available, it is expected that 136 will be produced, narrowing the previous demand/supply gap down to 197. Reference to Table A of the 1964 survey will reveal others.

Category B occupations

The main supply in these occupations, which require a secondary-school education plus two to three years of vocational training, is produced by the training schools and schemes maintained by ministries of the government which operate them to meet their own specialized requirements. In Tanzania these facilities are generally well established.

Once assured of the necessary supply of secondary-school output, these schools are capable of expanding sufficiently to meet all requirements. In this situation it might be said that the category B demand/supply relationships are much more 'manageable' than those in the other two categories.

It should not be inferred from this, however, that the creation of category B skills is easy. Even where finance is assured to establish or expand the training schools, and an ample supply of form 4 output is available, other things must be done. Competent instructors must be found; the curricula must be kept under constant scrutiny; and the whole operation of the institutions involved must be carefully supervised and managed. One good illustration of the problem involved is the plan target to train 2,650 'Grade A' primary teachers as part of a major effort to improve the quality of teaching in the primary schools. This number is about 50 per cent of the requirements for all category B occupations. In a country already desperately short of teachers, teacher-

¹ Government of Tanzania, Office of the President. *Survey of the high-level manpower requirements and resources for the five-year development plan 1964-65 to 1968-69*, Dar es Salaam, Manpower Planning Unit, 1965 (Thomas report)

instructors must be found, courses laid out, buildings constructed, equipment obtained, housing found or built for the teaching staff, dormitories for students, and so on.

Category C occupations

This category of occupations presents a special problem in manpower-programme implementation, just as they posed a problem in the original manpower survey. Category A and B occupations require a substantial amount of special formal education/training. Hence the sources, volume and timing of their supply are relatively easy to identify. In category C, by contrast, most individuals master these skills by relatively non-formal means in the plant and on the job and do not undergo formal courses or pass through formal in-plant training schemes. This is true even in those craft occupations that for generations have been termed 'apprenticeable'. It is even more true in most of the new 'industrial' skilled manual occupations, which have emerged since the industrial revolution. The skills cannot normally be gained away from or outside the employing establishment, because of the nature of the operation or the special machinery and equipment involved or the working environment itself.

The same elusive characteristic of skill formation in category C, which makes it difficult (if not impossible) to estimate supply in the original manpower survey, makes it equally difficult to manage in programme implementation. Under normal circumstances where no serious upheaval in the labour market is in prospect, the non-formal system of providing 'skill needs' works reasonably well. However, in considering plan implementation in respect of category C skills, it was decided that two factors were present which made it unwise to rely entirely on the 'spontaneous' generation of skills. First, the provisions of the plan provided for sharp expansion in gross domestic product in two major industrial sectors involving most of the jobs in modern crafts (manufacturing by 100 per cent; construction, much of it industrial, by 100 per cent). It could be expected that there would be heavy increases in requirements in these occupations. Second, a great many employers had been able to get by in the past because of a supporting structure of externally trained, highly skilled non-citizen supervisors, foremen, lead-men and key craftsmen. As a part of Tanzania's long-term goal of essential self-sufficiency at all skill levels, it would be necessary to assure an organized programme of on-the-job training looking to the ultimate replacement of these expatriate cadres.

The machinery of the national manpower advisory committee was utilized to explore and discuss this problem with representatives of organized labour, employers and government. The committee met on this problem and formul-

ated the basic shape of a national industrial training and apprenticeships scheme.

The scheme will be built around organized on-the-job training programmes, conducted by employers in their plants under the guidance and supervision of the ministry of labour. This will include the existing 'apprenticeable' occupations as well as industrial occupations of comparable skill level which traditionally have been left outside the 'apprenticeable' group. School facilities would be provided (the conversion of Moshi Trade School, for example), as required, for shop-related mathematics and draughting/blue-print reading and theory, to be given as sandwich courses during the training cycle (estimated from seven to twelve weeks a year depending upon the occupation). Instruction would be provided by the ministry of education.

It is proposed to finance the scheme, as well as to provide a lever to overcome employer inertia, through a training tax on pay-roll. Employers who satisfy the ministry of labour that they are capable of operating schemes to meet their own requirements fully would receive remission of the tax. A few large establishments with sufficient facilities and training capacity will be asked to 'over-train' against known existing or prospective needs in other establishments. In addition to remission of tax, such firms would be paid a training fee by the government for all craftsmen produced by request above and beyond their own requirements.

Increasing the skill supply through three other steps

In addition to increasing the nation's supply of skills through formal educational/training institutions (admittedly the major long-run suppliers) there are three (and only three) other lines of action for increasing the nation's skill supply: better utilization of existing manpower; upgrading workers through additional training; and bringing in expatriate talent.

1. Better utilization of high-level manpower already on the job

Like so many simple-sounding propositions, this one is most complex. Its execution involves major efforts in the improvement of organization and management. Human beings and their administrative institutions are peculiarly resistant to this sort of change. Nevertheless, it is a promising area, and Tanzania has devoted a considerable amount of time and attention to it, primarily in the public sector.

To this end, it created a staff inspection and manpower utilization section

of central establishments – which in turn initiated important utilization studies early in 1964. The first of these was begun at that time in the ministry of agriculture and was completed early in 1965. It consisted of a review by occupation of the professional and sub-professional posts in each of the divisions of the ministry. Detailed reports were prepared covering the staffing, grading, deployment and organization of the divisions, including the various training schools associated with divisional staffs.

The reports thus completed contained recommendations for basic changes in ministerial organization and work procedures. The consequent saving of thirty veterinary officers' posts through their better utilization represents about 80 per cent of all Tanzanian veterinarians to be produced by the University of East Africa during the entire length of the plan. The forty agronomists who may also be saved are equal to over half the plan number..

A similar study project was started in September 1964 in the ministry of communications and works and the final report has been completed. It examined the possibilities for improving the utilization of professional engineers by improving the standard of professional and sub-professional performance and providing for their more effective deployment. The recommendations entailed a major reorganization of the entire ministry, and two full-time experts have been posted to the ministry in order to assist in bringing about the extensive changes called for. A precise estimate of improvements in the use of engineers and technicians will not be possible until the slow and painful reorganization process – which is still under way – is completed.

2. Upgrading presently employed lower-skilled workers through training

The public sector of Tanzania has recognized the importance of training programmes to upgrade presently employed lower-skilled workers. To this end, impressive investment has been made in money, time and administrative energy and attention.

Probably the most notable of these is the Civil Service Training Centre. This institute, which has a staff of sixty-three and operates in a modern well-equipped building costing £200,000 (plus five years' recurrent cost of £308,000), concentrates primarily upon providing upgrading courses in those skills common to most ministries. For example, during 1965 the centre gave training to 1,206 individuals in a range of courses designed to impart and increase special job skills – in office management, personnel management, records management, accounting, intensive English, and for clerical assistants, and training officers and instructors.

Other institutions are involved in the work of upgrading through training presently employed lower-skilled workers. Thus the Institute of Public

Administration, associated with the University College of Dar es Salaam, provides courses for serving officers in public administration and local government, and for district legal officers and magistrates. The ministry of communications and works provides training in a special centre to upgrade staff to lower and middle management posts in the public-works fields. The police training courses provide instruction to gazetted officers, probation sub-inspectors, and CID radio operators. The community development's training centre provides instruction in community development. Lands, settlement and water development provides upgrading training to survey assistants, draughtsmen, assistant land officers and land clerks. The Ministry of commerce and co-operatives' college of business education provides short course instruction to selected individuals from the private sector in a variety of business subjects.

All these, in the aggregate, constitute one of the most impressive features of Tanzania's over-all manpower effort.

3. Bringing in high-level expatriate talent until the home supply is adequate

The sharp expansion in government requirements for new and extended social programmes, coupled with an expansion in both public and private enterprises under the stimulus of a programme of economic development, create demands which cannot be met from the very small pools of properly educated or trained local people at the time of independence. Nor can the demands be met for many years through local educational and training institutions – given the long lead-time involved in their output. If the nation's programme of economic and social development is to be carried on at all during the lead-time period, it will have to rely heavily on the use of 'rented' talent.

The 'bringing in' phase of expatriate talent also means retention of expatriate skilled persons at work at the time of independence, besides importation of new talent and retention of new recruits for longer periods. At the time of independence there was an inevitable loss of a substantial number of employed expatriates. But special efforts were made to retain as high a proportion of all desirables as possible. It was a logical, well-organized exercise beginning in 1962 when an africanization commission was established. The commission, despite its title, was as much concerned with the retention of desirable expatriates as it was in plotting the course of africanization itself. It was particularly valuable in removing the large element of uncertainty that beset expatriate incumbents at independence (December 1961) and in the days thereafter. In this way, it helped save Tanzania from a crippling initial exodus of individuals it did not want to lose, could not

afford to lose, and who themselves really did not want to leave but would have if the position had not been made clear and understandable.

Tanzania's more recent performance, however, in expatriate recruitment and retention, i.e., since the beginning of the five-year development plan, July 1964, has been spotty. Experience to date indicates a sharp rise in unfilled vacancies and a sharp drop in expatriates employed. Part of this drop reflects africanization in administrative posts, part of it outflow of technical skills. Basically, however, it reflects a failure in recruitment management by the responsible government unit. The case was so appraised by the United Kingdom economic mission (brought in at the president's request to evaluate plan-implementation performance) in the first half of the second plan year. The mission was highly critical of the recruitment performance and cited it as probably the major constraint on Tanzania's chances of achieving the results anticipated in the five-year plan. Since then, reforms have been instituted under the watchful eye of the cabinet, and the recruitment programme originally provided in the plan is rapidly being implemented. There is good reason to believe that during the remaining years of the five-year plan and thereafter the results will come much closer to meeting development requirements than was the case up to December 1965.

Administrative and institutional arrangements

Over-all organization for planning and plant implementation

To put the matter in a nutshell: a strong central planning organization is essential to the accelerated economic development of an under-developed country, and a manpower planning unit is an essential part of that organization. The *Report of the seminar on urgent administrative problems of African governments*,¹ issued by the United Nations Economic and Social Council, spells out the major principles which should apply to the manpower unit in such an organization. Without repeating the language of the report, it can here be said that Tanzania's planning organization (of which the manpower-planning unit is an integral part) and its *modus operandi* are in the main consistent with the norms set forth by the United Nations. Thus its planning organization, from its inception in the spring of 1963, has been independent of any other ministry of the government. It has been

¹ Document E/CN.14/180, United Nations Economic and Social Council, 18 December 1962, page 12 ff.

given great authority.¹ (In fact, it has been given greater authority than it has ever felt it could use effectively.) Further, the planning organization developed the five-year plan in the closest collaboration with the other ministries of the government over the period of a year. This was an abrasive and exhausting undertaking – since old-line ministries do not take kindly to central planning bodies. But when it was over, all parties were fully familiar with all features of the plan and had a good grasp of their responsibilities for carrying it out. The painfulness of the process was infinitely preferable to the type of situation where a planning organization retreats behind locked doors, drafts the plan in complete detail by itself, and presents it as a *fait accompli* to a baffled (and hostile) array of ministries.

One of the features of plan organization in Tanzania has been the establishment of planning units in the several ministries. While they operate as integral parts of the ministries, they provide a focal point for dealings between a ministry and the central planning organization. In this way, they have greatly facilitated both planning and plan implementation. Indeed, in the manpower-planning field, the existence of a planning unit in the ministry of education is regarded as a major factor in the pronounced success to date of the educational phases of the five-year plan.

The manpower-planning unit created a national manpower advisory committee, comprised of top representatives of the Federation of Tanganyika Employers, the Association of Chambers of Commerce, organized labour (National Union of Tanganyika Workers) and selected government ministries. This committee has been highly useful in obtaining advice, reactions and opinion together with a fair amount of concrete work, particularly on such projects as the drafting of the national industrial training and apprenticeship scheme, as well as a trade testing scheme.

Machinery for distribution of the skills produced by the implemented plan

The process of skill production cannot in and of itself cope with conditions in a newly independent African country like Tanzania. Normal labour-

¹ Presidential Circular No. 4 gives the planning organization clear-cut final authority in any matters of difference in planning matters *vis-à-vis* other ministries of government. It also gives it full authority to intervene with any ministry on any matter pertaining to plan implementation. In practice, however, to date, all major disputed issues with other ministries have gone to the cabinet and the president for final decision. The authority to intervene is exercised, but any major issue arising from the intervention goes to the president and cabinet

market conditions do not prevail and machinery must be created to generate in an orderly and controlled fashion a two-way flow of skilled individuals in and out of the high-level-manpower posts in the economy. What this entails is a complex manoeuvre, which might be described as the 'changing of the guard'.

At the time of independence, practically all jobs of Category A and B varieties and most of Category C occupations were held by expatriates. The new nation must look to their eventual replacement by its own nationals. Yet it needs them until its own highly educated/trained people are prepared for these jobs through the requisite schools and institutions. The problem is to hold expatriate workers until local workers are ready. It must then pry the former loose in an orderly, scheduled manner as the educated/trained supply of local personnel begins to emerge and acquires the necessary experience to take over. Tanzania is carrying out this changing of the guard in as fair and orderly a manner as possible.

The public sector

The africanization commission, which made its report in 1962, the first full year of independence, established a pattern of operation which has since been carried on by the central establishments organization. In essence, it provides machinery to maintain a constant scrutiny of every middle- and higher-grade post and of the prospective supply of Tanzanians coming from the schools or from lower posts. The same machinery is designed to ensure the scheduling of replacements of incumbent expatriates as properly educated/trained Tanzanians come forward.

At the time of independence (9 December 1961), only about 17 per cent of the middle-higher grade posts in the civil service were occupied by Tanzanians. At the close of the calendar year 1965 this figure had risen to 57.2 per cent. The rate of increase is now levelling off rather sharply. This is because the remaining posts are heavily weighted with the science/mathematics-based occupations, for which the Tanzanian supply is, and will be in the immediate future, much lower than demand.

Meanwhile, since the government's policy has been to localize the public sector first, it has devised several mechanisms to direct the flow of needed skills into the government. The 'tie' on all university scholarships has already been noted. But there is more to the mechanism. A system of allocation was set up in central establishments to ascertain in advance the yearly requirements of the various ministries for secondary-school graduates and to assign each a quota which is normally below their stated requirements — since the prospective over-all supply up to 1965 has fallen short of over-all government demand. Some weight is given in the allocation process to pro-

gramme priorities within the government. A first priority or 'cream off' is given to form 5 intake, teacher training and the intake needs of the government pre-service training schools. The rest is allocated among the ministries for direct employment in relation to their quotas and the wishes of the students, and these ministries then make formal offers to the students assigned to them under their quotas.

A similar system operates for persons completing higher secondary (form 6) who are unable to qualify for entrance to the University of East Africa. These are in brisk demand.

The two systems each operate on a voluntary basis. In so far as the student is concerned, he is under no compulsion to accept the offer he receives, nor is the ministry bound to hire him once he appears on the scene. Nevertheless, the operation of the systems has the effect of giving the government first access to the supply of educated personnel.

The private sector (including parastatal bodies)

When the government was taking almost all of the output of secondary and higher institutions, the private sector exhibited no missionary zeal to africanize its middle and higher posts. It was free to outbid the government for the expanded (educated) supply from the schools, but it did not often do so. Early in 1964, however, it was noted that the provisions of the development plan would very shortly be producing secondary-school outputs in excess of government requirements. Action was taken, therefore, to lay the foundation for a programme of africanization in the private sector.

The manpower-planning unit convened a series of meetings of the national manpower advisory committee. The committee's extensive discussions matured in a recommendation that steps be taken to launch a programme of africanization in the private sector, synchronized to the volume of secondary-school leavers becoming available to that sector. The employer organizations represented on the committee pledged the co-operation of their members.

In a related move, and at the recommendation of the manpower-planning unit, the ministry of labour established a specialized placement office to be a central national clearing-house for secondary leavers (and higher) and for employers desiring to employ individuals from this newly available supply. Then, between January and March 1965, the appointments bureau, under the sponsorship of the employer organizations, canvassed all significant employing establishments and obtained indicated requirements of about 500 possible openings. The government, in turn, delivered to the bureau the school records of about 250 form 4 leavers who were over and above the government needs.

Yet this first year's exercise was a complete failure. Fewer than fifteen of

the 250 secondary leavers were placed in jobs under the agreed procedure between the employer organizations and the bureau. The blame for this poor showing cannot be fairly laid at the door of the private sector alone. The 250 individuals who represented the available supply were in the main the left-overs after the government had hired (or taken for training) all the better prospects. None of the 250 leavers had obtained the Cambridge University Overseas School Certificate. In retrospect, it looks like a case of bad timing by the manpower-planning unit; its efforts should have been held in suspense until it had on hand a better quality of supply. The second year's exercise, now in progress as this is written, has at least three important features which promise substantially more success than was true of the initial attempt. First, steps were taken to provide a place on the school-record forms for students who wished to write in a preference for employment in the private sector. These were reserved for the appointments bureau, and these individuals were not 'picked over' by the government ministries. Second, a much larger total number of form 4 leavers is currently available over and above government requirements (about 800). By July 1966, the appointments bureau had placed 75 per cent of them and the remainder had found jobs on their own. And third, changes have just been made in Tanzania's immigration regulations which are expected to give considerable impetus to employer interest in hiring and training African workers, particularly those with a substantial level of education. Up to now, all that has been necessary from an occupational standpoint has been for the employer to provide evidence to the immigration division that no one possessing such skill was available in the Tanzanian labour market. An entry permit (or renewal) was then issued. Since employers were training few Africans in these skills, the situation tended to be self-perpetuating. But a recently approved new regulation requires, in addition to the existing test, that the employer satisfy the ministry of labour that he has in existence a training programme which will produce a trained African for that post within a specific period of time. Entry permits will then be granted within that time frame. It is intended that this scheme should be administered constructively and with flexibility. An employer who does not at the time of application have a training plan will be given a reasonable period to set one up. If he has no trainee with a suitable educational base he will be required to file an order with the appointments bureau. If the bureau has a suitable candidate (and it will actively recruit in addition to the applications on hand) it will refer this candidate to the employer. If it does not have a suitable candidate, it will certify that fact and the employer will be given an easement until one can be found. (This will be a typical case for some time to come for posts requiring a specialized university degree.)

While a constructive and reasonable administration of the new regulation will be provided, it is also firmly intended that employers *will* hire and train Tanzanians to fill new posts in the middle and higher ranks and also such posts left vacant by turnover or wastage.

Manpower research

An essential element in carrying out a manpower programme is the development of pertinent research. Some is needed to provide bench-marks and measurement of progress being made in the programme, or to detect unexpected developments. Research is also needed in connexion with the exploration of new, better, or cheaper ways of doing things in the fields of training or education – or in anticipation of possible changes in the financial situation for development, or needs to accelerate output.

Ideally, and for the long term, appropriate institutions should be established and developed to provide a regular flow of all significant information necessary to carry out a manpower programme effectively. This is often difficult to do during the first five to ten years after independence – the same period, of course, in which most manpower programmes are getting under way. If the manpower-planning unit is to have the information it needs during this period, it must undertake to do the job itself, contract it out, or prevail on other organizations to accomodate it by undertaking single, special-purpose studies.

In so far as Tanzania can be held up as a procedural model, its experiences point to the following steps in a research programme. The initial high-level-manpower survey without exception must be (and was) made by the manpower-planning unit itself. The kind of detailed occupational information it requires is never readily available in newly independent countries (or in fully developed ones either for that matter). Tanzania has had two. One was made in mid-1962. It was pre-plan by about eighteen months. The second, in 1964, was made to cover the plan period and to reflect the development features of the plan in the requirements estimates. Many of the new African countries have basic wage and salaried employment information by totals and by major industrial sector. This may be prepared at irregular intervals or, as in the case of the East African countries, annually. The information is indispensable in constructing any meaningful sample for manpower surveys and for plotting the changes in employment as time passes.

Tanzania, too, has such an annual enumeration, dating back to the late 1940s. The gross totals information was fairly accurate but it came so long after the event as to reduce its usefulness greatly for plan-implementation purposes. The results of the July 1965 enumeration, for example, which measure the

changes taking place since July 1964, are not available for use until about February or March of 1966, a lag of over eighteen months.

In order to get a more current gauge of the employment responses of the economy to the development-plan actions, the manpower-planning unit undertook in September 1963 to establish a quarterly employment trend series. It did this only because no other organization had the resources to undertake the project. (The central statistical bureau was down to two professional statisticians, and the ministry of labour had none at all.) Four quarterly reports were made up to July 1964. The project was then suspended when the manpower unit itself suffered a loss of staff. But, in the interim, Tanzania has launched in the private sector a retirement programme (provident fund) and has acquired a computer. Beginning in July 1966 it will be possible to obtain from the computer (from provident-fund returns made by all wage employers and the government) an excellent quarterly series.

All African countries lack information about the labour force in respect to its size, the nature and the number of its major components (men, women, employed, unemployed, underemployed). To obtain this important benchmark information, the manpower planning-unit in Tanzania secured an expert statistician and the essential funds needed to carry out in 1965 the first such survey in any African country south of the Sahara. This was done at a cost of £22,000 and it utilized a staff of about seventy enumerators. Since September 1965, Tanzania's manpower-planning unit has had a full-time professional statistician and a trained technician. They are currently engaged in a re-survey of selected professional occupations in the government, resulting from certain curtailments in development funds which had been anticipated in the five-year plan.

Since development plans tend to be quite optimistic and since Tanzania is a very poor country,¹ some research has been undertaken to explore possibilities for economies in the production of skills – and to see if planned outputs can be realized despite a sharp drop in the plan's anticipated development resources. Among the more important in this line of studies, the following are worth noting:

1. There was the work undertaken by the deputy principal of the University College, Dar es Salaam, to produce graduate secondary teachers in three

¹ Estimated *per capita* income is about £20. The price of the major export earner, sisal, has sunk to historic lows and is seriously threatened by a synthetic substitute. Aid from the Federal Republic of Germany and the United Kingdom (upon which rested a significant portion of planned capital expenditure) has been suspended. Thus both capital and recurrent resources will be substantially under the levels anticipated in the plan

instead of four years post form 6. East Africa University had always insisted upon a full year of training in pedagogy after a person had achieved his B. A. or B. Sc. Following considerable study, the deputy principal devised a curriculum which made it possible to produce in the normal three university years a teacher acceptable to Tanzania's ministry of education. This removed a major disincentive and road block in the production of secondary teachers. (The first group of about 105 under this plan entered in 1964/65 and will come out in 1966/67.) By eliminating a whole year, costs per student will be reduced by £1,000 per head – representing a very considerable saving when one considers that more than 300 are expected to graduate in the three-year course during the plan period.

2. Beginning early in 1964, the manpower-planning unit in co-operation with the ministry of education conducted a national survey of secondary-school space utilization. The survey indicated that most of the schools, with some adjustments in schedules, could accomodate another shift of students from about 1.30 p. m. each day. (No double-shifting of teachers was contemplated.) It would thus be possible to open up very many new streams without added capital costs for anything except teacher housing and a low-cost type of student dormitory. In September 1965, the president decided that, beginning with the next five-year plan, all additional streams would be accommodated in this manner. The subsequent decline in aid resources may make it necessary to advance into the current plan period the effective date of this decision, so that the necessary output targets may be met.

3. With the class entering East Africa University in July 1966, Tanzania will have over 1,000 students enrolled in the university at an annual cost of about £1,000,000. This is almost one-sixth of the total funds available to the ministry of education for recurrent expenditure for all purposes in the current fiscal year. Yet the university outputs (category A), like Tanzania's outputs from secondary schools, are threatened by the drop in anticipated aid and in world prices for Tanzania's exports. To meet that threat, and at the same time to advance the overriding government policy of producing, in one way or another, skills needed for development, the manpower-planning unit is pressing for economies in obtaining university outputs. It is not and cannot be wedded to a fixed way of doing this but it is already taking certain steps to meet the problem. A substantial part of the capital required in the university's next triennial plan is for expanded residence facilities. The university now requires all students to reside on campus under an occupancy policy of two to a room for the first two years,

and single occupancy for the third. The manpower unit has recommended that the university must change its present policy so as to allow students from families in Dar es Salaam and environs to live at home. All other new students are to be accommodated either in existing campus residence halls – on the basis of two persons per room for all classes – or in off-campus hostels. The latter are to be built at a per-place cost not to exceed the most recent ones built for Dar es Salaam Technical College, namely, at around £200 per place (in contrast to the university's £1,060).

Another step is in the field of student loans. It is proposed to set up a student loan fund beginning with the new school year (1966/67). All bursaries should be handled as loans and repaid in the amount of 50 per cent of the total cost in the ten to fifteen years after graduation. While the first effect of this would not be felt for three to four years, it will eventually result in major cost reductions to the government for this extremely expensive element of the educational programme.

Creating a climate of public opinion conducive to plan implementation

One of the most vital elements to manpower-programme implementation is often overlooked in discussions of the subject. It is not sufficient to establish manpower requirements, a plan for meeting them and a programme of implementation to convert the plan into constructive action. The programme has to be sold and re-sold and its elements and rationale hammered home until its folk-lore and terminology become household words.

The manpower planners, of necessity, do a great deal of this themselves, and they use every medium of communication to that end. But by far the most effective avenue for securing public understanding and co-operation in these relatively new, somewhat complex, manpower programmes is through the political leaders of the country. The public in a newly developing country looks to the new leaders for instruction and enlightenment to a far greater degree than prevails in the developed countries, in the West at least. The new leaders, at any rate in Tanzania, sincerely strive to provide this instruction and enlightenment. It is not for nothing that Tanzania's president is called Mwalimu (the Teacher). Needless to say, the political leaders are far more effective in this than any technician or civil servant can possibly be.

A salient example, standing for many others that could be cited, is President Nyerere's speech in May 1964 presenting the five-year development plan to the parliament. It drove home in simple, lucid terms the essence of the

plan's central educational policy and the sacrifice it will require from the Tanzanian people. President Nyerere declared:

I have already stated that one of the major long-term objectives of our planning is to be self-sufficient in trained manpower by 1980. This means a carefully planned expansion of education. This expansion is an economic function; the purpose of government expenditure on education in the coming years must be to equip Tanzanians with the skills and the knowledge which is needed if the development of this country is to be achieved. It is this fact which has determined government educational policy....

We have still to expand formal education in the secondary and technical levels. We must do this in order that we shall be able to provide all the trained manpower we need within Tanzania by 1980. If we are to do that we cannot use our small resources on education for its own sake; we cannot even use them to make primary education available for all....

But this policy means that some of our citizens will have large amounts of money spent on their education, while others have none. Those who receive this privilege, therefore, have a duty to repay the sacrifice which others have made. They are like the man who has been given all the food available in a starving village in order that he may have strength to bring supplies back from a distant place. If he takes this food and does not bring help to his brothers he is a traitor. Similarly, if any of the young men and women who are given education by the people of this Republic adopt attitudes of superiority, or fail to use their knowledge to help the development of this country, then they are betraying our Union. I do not believe this will happen.

Speeches of this kind take political courage of a high order, but they are invaluable in carrying government policies to the people and securing an understanding of the hard facts underlying the development effort, especially in the education/manpower phases of it.

Employment, wage levels, and incentives

In the strategy of human-resource development, the purpose of building incentives is to encourage men and women to prepare for and engage in the kinds of productive activity which are needed for accelerated growth. To accomplish this, the compensation of an individual should be related to the *importance of his job* in the modernizing society. It should not depend upon his level of formal education, the number of degrees held, family status or political connexions. And the relative importance of his job should be based not on tradition or heritage from colonial régimes but on an assessment of the manpower needs of the developing economy.

F. Harbison

This, in a nutshell, is the problem of incentives facing most developing countries. Most African countries present a sad contrast: employment is either static or only rising very slowly; there are many unemployed school leavers; there are extreme salary differentials related to formal educational qualifications; and education becomes year by year ever more costly. This paper attempts to show how this has arisen and what must be done with the incentive structure to change it. It starts with the wider issues of unemployment and wage levels, because only by understanding these is it possible to devise adequate reforms for incentives. Although it concentrates upon the African situation, a number of the points made apply to other developing countries also.

The background

In recent years, two features have dominated the labour markets in African countries. In the first place, employment levels have been rising much more

¹ I am grateful to James Blum and Raul Trajtenberg for helpful suggestions they have made for this paper

slowly than gross domestic product and in many cases have even been stagnant. The proportion of the population with jobs has been steadily falling. This lack of wage-earning employment has become a serious and growing problem, especially among primary school leavers.

In the second place, in contrast with the state of employment, the whole range of wage levels has been rising. The disparity between the employed and unemployed has thus been increased while preserving at the same time the extreme differentials between those on high salaries and those on low ones.

Meanwhile, educational systems have been expanding in two important ways. Firstly, enrolments have been increasing at all levels, but particularly in secondary and higher institutions; and secondly, the costs of education have been growing faster than enrolments and absorbing ever-larger shares of the government budget.

To some extent these various features are to be found in most developing countries, though African experience seems more extreme in most respects. Table 1 shows the evidence for unemployment in several African countries.

The political problem created by this grave unemployment can be fully appreciated when it is seen against the background of the populace's rapidly

TABLE 1. Percentage of African population in wage earning employment

Country	Year		Index of employment in 1962 ¹
	1948	1962	
Kenya	7.4	6.3	95
Tanzania	5.3	² 4.5	² 106
Uganda	3.2	3.1	96
Malawi	² 6.1	4.6	83
Rhodesia	⁴ (17.2)	16.8	98
Zambia	9.1	7.0	84
Cameroon	—	—	82
Gabon	³ 10.2	² 4.4	² 101
Ghana	⁴ (6.2)	² 5.0	² 126
Nigeria	1.2	² 1.1	² 89

¹ 1957 = 100

² 1961

³ 1957

⁴ Unofficial estimates

SOURCE

Gus Edgeen 'Employment problem in tropical Africa', *ICFTU Bulletin*, November/December 1964

rising hopes and expectations. When total employment has grown so little, if at all, it is hardly surprising that primary-school leavers are unemployed. Indeed it is unfair to put the major blame on the educational systems for the thousands of school leavers turned on to the market each year with little hope of finding a job. It is true that those responsible for education have a duty to relate the approach and content of education as closely as possible to the opportunities facing primary-school leavers. But, unless those responsible for *economic* policy produce a structure of economic growth that increases the number of available jobs, the ministries of education can hardly be blamed for existing unemployment.

Meanwhile, average earnings have been bounding ahead. In Zambia, for example, they rose about 8 per cent per annum for the ten years preceding independence and over twice as fast in 1964 and 1965, though employment in 1965 was still less than what it was in 1957. There are many parallels elsewhere in Africa to this experience. *Money* wage levels have been rising quite rapidly – certainly faster than in most Western industrial countries – and in spite of unemployment. Increases in *real* wages have averaged about 4 per cent per year in Africa.

The increases have made the disparity greater between those with jobs and those without jobs, whether unemployed or in the subsistence sector. In addition there are wide differentials in the range of wages and salaries among the employed. In most colonial countries, the top of the salary scale was related to expatriate conditions, the bottom to local ones. The middle of the scale was stretched out between the two, which at first was not a costly arrangement, since few people fell within it when training and manpower were both scarce at the middle level. As independence approached more local people were promoted but the basic salary structure was little changed. The result in Africa is this. The differential between skilled and unskilled may still be 150 per cent or more – even when no racial element is involved – compared with differentials of 15 to 40 per cent in Western-type industrial economies.

Then again, there is the rapidity of educational expansion in Africa. From 1950 to 1960 secondary enrolments increased by an average of about 9 per cent per year, faster in West Africa than in East and Central Africa and slightly faster in the French-speaking territories than in the English. But in virtually every African country the rate of secondary expansion far exceeded that in other continents – 6 per cent in Western Europe, 7 per cent in Asia and 8 per cent in Latin America. This rapid growth suddenly increased the stock of secondary-school graduates.

Primary-school expansion, though slower than secondary, has also been rapid by the standards of other continents and its cost has risen even more rapidly. Higher education has expanded even more rapidly. The result has been that education has been taking an ever larger share of government

expenditure. The median of educational expenditure in eighteen African countries rose from 10 to 15 per cent between 1950 and 1958; in three countries, by 1962, it had reached over 25 per cent of total government expenditure.

Faced with these harsh realities, it is easy to see why some people draw the conclusion that primary education must be held back – since its products are both unemployed and costly. One purpose of this paper is to suggest a different interpretation and conclusion.

The dynamics of the situation

When taken together, the factors outlined at the beginning of this paper react and reinforce one another to raise the cost of education, increase the general level of wages, hold back the growth of employment and lead to unemployment among school leavers. In a dynamic setting, the mechanism operates as follows. Given large fixed differentials in salary scales which are mainly linked to levels of education, the effect of rapidly expanding enrolments at the higher education levels is to increase very rapidly the numbers in the higher salary groups. If this occurs when total employment is rising slowly or is stagnant, the result is a rapid increase in the average levels of salaries and wages. Thus differentials which, if flexible, are useful incentives to attract persons at one level to seek the further education or training needed to reach the next level above, become instead, when rigid and inflexible, the lever which operates to raise the general level of wages and salaries. Once salaries and wages have been raised, other results follow. All government services cost more, thereby inhibiting their expansion and the growth of government employment. In the private sector, the increase in the price of labour leads to mechanization and the reorganization of work in ways which use less labour. Employment thus continues to grow more slowly than output, and may even drop.

This process is seen perhaps in its purest form in the educational system itself and explains why the costs of education have risen so much faster than enrolments. In education, even more than elsewhere, salary levels are closely related to the teachers' educational attainment. Consequently, as the teaching services are upgraded, the average level of salaries rises. If at the same time enrolments are expanding, the costs of education accelerate very considerably. Meanwhile, the rising cost of labour slows the growth of employment elsewhere, making school leavers yet more dependent on teaching for jobs. This speeds the upgrading of the teaching force and accelerates the expanding costs of education still further.

Ugandan experience clearly illustrates what can happen. From 1938 to 1958, the over-all recurrent cost of primary education rose nearly forty times, even though primary enrolments only rose seven times.¹ About two-thirds of the increase in the average teacher salary is attributable to the general rise in salary levels, but a third is the result of continuous upgrading in the qualifications of teachers. In 1938, most primary teachers had only eight years of education, if that. By 1958 most had eleven or twelve years and had thereby qualified for a salary differential that nearly doubled their 1938 earnings.

Although a rigid link between salaries and educational qualifications makes this process automatic, the same effect often arises from other causes. The cyclical fluctuations which plague most primary producing countries easily lead to salary levels being established in boom conditions which are far above what can be paid in times of slump. Since salaries can seldom be reduced, employment is reduced instead.

Non-economic pressures to raise wages and salaries are influential at all times and are considerably stronger than the pressures to raise employment. The capacity for industrial conflict may be negligible, but the political influence of the employed labour force is often considerable: 'Increases in legal minimum wages or public salaries seem an easy route to prove the value of a recently acquired independence. [Governments threatened by instability are] anxious to placate a new and potentially formidable working class. Arbitrators and members of legal wage boards are susceptible to public agitations and governments intervene rapidly in disputes: indeed the strike is often a demonstration to influence the authorities rather than a means of direct pressure on employers.'²

The result is that at all levels the trend in wages and salaries is likely to be

¹ During the same period, the average primary-teacher salary increased eight times and the pupil/teacher ratio increased by a quarter, thus offsetting some of the increased costs. Data from Chapter III of A. R. Jolly, *Planning education for African development*, Nairobi, East African Publishing House, 1967

² H. A. Turner (*Wage trends, wage policies, and collective bargaining: the problems for under-developed countries*, Occasional Papers 6, Department of Applied Economics, Cambridge University, 1965) has collected a good deal of evidence on this subject which suggests that the generalizations of this paragraph probably apply to many developing countries in recent years. Studies of individual countries also suggest that increases in wages and salaries often occur in spite of market forces rather than because of them. Cf. also J. E. Meade, 'Mauritius, a case study in Malthusian

upward and that salary scales established in times of scarcity tend to persist long after education and training have eased the supply. Indeed, when salaries and qualifications are linked directly, increasing the supply may actually raise average remunerations. Furthermore, direct links between salary levels and qualifications may often inhibit any further expansion of education or training on the ground that it will be too expensive to employ the products when trained. In Uganda, for example, teacher-training facilities were deliberately under-enrolled in 1948 for fear of the additional expense of employing better-trained teachers. Yet it should be stressed that the conflict between the desire to improve the labour force by education and training and the cost of employing it when the process is complete is not inevitable. Institutions can be changed. Continuing improvements in the labour force are clearly desirable and should not be abandoned because of a failure to grapple with the wage structure. The assumption that when everyone's qualifications rise salaries should rise too is far from justified in a developing country with widespread unemployment. It follows that, when incentives are under consideration, a concern for the general level of salaries is as important for policy as the differentials between different salary groups.

Incentives: useful and perverse

As incentives, differentials in earnings between jobs can influence the flow of manpower in four useful ways. Differentials can (a) attract recruits into the training which prepares them for occupations important for development, (b) attract trained nationals into the occupations and places where they are most needed for development, (c) help to keep trained nationals in these occupations and places, and (d) attract expatriates from abroad to fill key specialist posts.

A basic difficulty exists in that differentials which are optimum for one purpose may be far from optimum for another.¹ Differentials which are sufficient to attract trained people into jobs may be insufficient to attract

economics', *Economic journal*, No. 283, Vol. LXXI, September 1961, pp. 521-34; L. G. Reynolds, 'Wages and employment in a labour-surplus economy', *American economic review*, Vol. LV, No. 1, March 1965, pp. 19-39; and Dudley Seers, 'The mechanism of an open petroleum economy', *Social and economic studies*, March 1964

¹ Except of course if in all respects it was acceptable and possible for the labour and education markets to function under conditions of perfect competition, which is not the case

them into training, but more than sufficient to hold them once they have settled in. In Africa, the typical situation is the reverse. Extensive differentials established to attract expatriates for key specialist posts dominate the whole salary structure and largely make the incentives excessive for the first three purposes. This can be clearly shown by considering the *level* of skilled wages in terms of the two differentials which comprise it. One is the differential between the standard of living in the modern monetary sector and that in the traditional subsistence sector; the other is the differential between the earnings of the unskilled and those of the skilled and educated.

The first is the differential which, as already indicated, has been widening rapidly in recent years. From an economic viewpoint, this ever-widening gap has generally far exceeded any useful function as an incentive; the numbers attracted from the traditional sector to the modern, from the country to the towns, from illiteracy to basic primary schooling, all today far exceed the opportunities open. Worse still, this exaggerated incentive is often a real menace. Unemployment and the influx to the towns would no doubt have arisen even if the differential did not exist. But the extremes between those with jobs and those without and those in the subsistence sector add frustrations and disillusionment, and tend to make the political situation unstable.

The margin between the earnings of the educated and the unskilled is also generally excessive in terms of the first three functions of incentives. This is the differential which is dominated by what must be paid to attract expatriates from abroad. But, within the country, the desire for more education is already very great. When only a handful can find places for further education, it is pointless to allow the local situation to be dominated by a wage-incentive structure created to win recruits for the foreign legion. Here again, although particular occupations or levels of training may need a greater emphasis, the general level of differentials is already well above what is usually required, at least for incentives to fulfil the first two purposes.

As regards the third purpose – the need for incentives to attract *local* people to stay in the jobs and places where they are required – a conflict with the first two purposes can arise when local personnel obtain qualifications which make it easy for them to find jobs in other countries. But as will be argued in a later section, it is preferable to resolve this conflict by means which do not affect the level of wages and salaries rather than by means which do.

Excessive differentials cannot be passed off as an expensive but otherwise harmless luxury. They increase inequalities and frustrations in society, and encourage luxury consumer expenditures, especially on imports. From a manpower point of view, they encourage a spiral of manpower inflation. Too many jobs chase too few qualified local people. This leads to frequent

changes of job, often before the incumbent has had time to acquire experience or be fully useful. The same occurs in connexion with training courses. Incentives for ever higher courses may be so strong that a man finishes one course only to begin another, until eventually he has acquired sufficient qualifications to apply for entrance to the university. If the differential between university and secondary school were not so wide, this waste of specific training and experience might not occur.

In addition, extreme differentials make it prohibitively expensive to alter the pattern by adding to some without removing from others. The need to give greater emphasis to technical jobs and to jobs in the rural areas is well acknowledged, but simply to add a new allowance in respect of them would be very costly.

Whereas the differentials between different levels of jobs or education are clearly excessive, those between different types of jobs and between jobs in the rural and urban areas are not enough. Manual, technical and professional jobs are often insufficiently paid to attract and hold people in the required numbers. The result is that training institutions in these fields are often under-enrolled. Furthermore, students who do qualify in these fields often leave them as soon as a white-collar opportunity occurs elsewhere. This is all the more true of jobs in the rural areas. Sustained development depends on rural progress, yet in almost every country, the rural areas fail to attract and hold the skilled and educated persons in the numbers they need. Often the existing salary scales encourage this, by keeping rural salaries below those in towns, on the grounds that the cost of living is lower. Perhaps the most important single change needed in salary differentials is to shift the balance in favour of the rural areas.

Policy implications

What is wanted is an incentive structure which is sufficient to attract nationals to the training, occupations and places needed for development, and expatriates to specialist posts, but which does not lead in time to an over-inflation of the whole wage and salary structure. Although this seems to imply some system of incentives not linked with monetary rewards, it has been observed on the basis of experience, that misallocations will not be corrected by publicity and exhortations but only when the system of rewards and status in a modernizing society are changed, and the initiative in making changes must come from the government itself in the form of a complete revision of the entire system of compensation of government employees. But is it possible, however, to revise the entire salary structure in line with

the needs of development and still avoid the tendency for an upward drift in the whole structure?

Three conditions are needed to avoid the upward drift: (a) salary differentials must not be rigidly linked to general educational levels (or any other characteristic which needs to be rapidly expanded as development proceeds); (b) differentials must be adaptable to changes in the priorities of development; and (c) cost-of-living clauses must be avoided in wage agreements. The first condition does not seem too difficult. Salaries can be related to position, to levels of responsibility, and so on, rather than to educational qualification. As the educational standard of the population generally increases, the educational requirements for the job would be raised, but not necessarily the pay. The rising qualifications required for the post would themselves provide the incentive for further training and upgrading and the incumbent would need to undertake this in order to be eligible for promotion and for continuing in the job.

If such a reform were introduced in the public service, it would go a long way to solving the problem. Government salaries are usually part of a comprehensive structure bound by a vast accumulation of inherited interrelationships which are slow and difficult to change. In contrast, the private sector is more adaptable. If reform can once be introduced into the public sector, much of the rest will follow. Furthermore, because the public sector employs the greater part of the educated labour force in most developing countries, a start in this sector is itself over half the battle.¹

In the short run, the chances of reform are enormously affected by the number and position of expatriates. As long as there are substantial numbers of expatriates employed, it is extremely difficult to move toward a rational salary structure, based on incentives aligned with the national needs of

¹ In Uganda in 1961, for example, over half of all graduate manpower and nearly a third of secondary qualified manpower was employed in the public sector. If full-time (but unpaid) students are included, the proportion of all high-level manpower occupied in government or education rose to nearly a half. This may well be true of the developed countries also. Mark Blaug ('The rate of return on investment in education in Great Britain', *The Manchester school of economic and social studies*, September 1965, pp. 205-62) states that 45 per cent of the 450,000 university graduates and about 60 per cent of the 750,000 people with full-time higher education in the United Kingdom in 1961 were public servants, that is, worked in education, health, the civil service, local government, the armed forces, the nationalized industries and government research establishments, with as many as 45 per cent of those with full-time higher education teaching in schools, colleges and universities.

development, instead of being dominated by conditions abroad. The most extreme effects, it is true, can be mitigated by such arrangements as paying expatriate allowances abroad or as terminal gratuities. But it is unlikely that these can remove all the 'expatriate influences', and the local salary scale will probably continue to embody differentials far in excess of what is needed for local incentives.

In the long run, the only satisfactory answer is a sufficient expansion of local education and training to eliminate entirely the need for recruiting from abroad. To be successful, this must be accompanied by some restrictions to prevent local manpower taking jobs abroad. Without them, either expansion will be offset by losses abroad or the original salary scales – with their extreme differentials – will have to be continued to induce nationals not to emigrate. The better approach would seem to be to introduce certain controls on the right of skilled nationals to take jobs abroad. While abuse of such controls must be carefully watched, there is an obvious need for measures of this sort to ensure that specialist education and training benefit the whole community as well as the individual.

The foundations of reform will be laid by also ensuring that the educational and training programmes of the country are aligned with manpower needs and that sufficient students are attracted into them. Here the opportunities for control or influence are probably greater and less difficult to introduce than changes in the salary structure. Directing education and training toward the major needs of manpower and focusing incentives to attract persons into these lines of education and training is usually cheaper and more effective than altering the relative differentials of a whole occupation group. This approach concentrates cash benefits on the margin – which presumably is the easiest point to influence, involves the least commitment of funds and is the easiest to revise when needs change. Furthermore, there is some evidence that in choosing careers, students are less influenced by a whole assessment of expected lifetime earnings in the occupation than by a whole host of more immediate factors, including the type and attractiveness of training. If this is true, a system of once-for-all incentives may provide a better way to achieve the desired change in the distribution of students among the various courses of study.

Once-for-all incentives can take the form of differences in the quantity and value of scholarships awarded and indeed in the number of places made available for each type of course. In Zambia the government has recently tried two other ways to influence the choices of its secondary-school leavers. The first is by issuing a career guidance booklet which lays great stress on the needs for training in fields important for the country's future development. A notable shift in preferences, at least on paper, was revealed when these students subsequently declared their choices on 'career preference forms'.

These forms were later used by the government as the basis for allocating school leavers to the various educational and job opportunities open to them. Although in most cases the first choice of the students was followed, sometimes the second, third or fourth choice was followed if this better matched the national needs.

Further incentives for particular jobs and courses of training in Zambia have been proposed through a system of 'national development awards'. These awards would be given to students or employees in lines of work or training contributing to development. In addition to their purpose in strengthening particular jobs or training courses, it is intended that they should help to break the 'white-collar mentality' by underlining the dignity and importance of many of the blue-collar jobs which are too easily despised.

Similar attempts have been made to raise the status of rural jobs in other countries. In Cuba a variety of practical incentives were devised in addition to national propaganda. University scholarships were offered to teachers who had served in rural schools, and subsidized vacations were provided for them and their families (combined with refresher courses in the mornings) at some of the best beach resorts. Conference centres were planned for some of the remoter areas, to provide rural teachers with a chance to meet their colleagues at week-ends and to exchange their correspondence-course papers, in places where postal facilities did not exist. This sort of approach, as well as salary reforms, is needed if the unattractiveness of working in the rural areas is to be overcome.

Cuba also introduced some dramatic changes in the system of primary-teacher training. In 1962, the first year of the teacher-training course was held in a mountain training camp, midst swirling clouds and rough barrack living. As much attention was given to hardening teachers for the tough conditions they would later encounter in the rural areas as to basic instruction in teacher training. Although the second year was more conventional, the authorities believed that the type of training given in the first year was indispensable for winning real dedication to later work in the rural areas.

Reforms on these lines might go far in attracting people to the jobs, training and places needed for development. But they must be combined with reforms of financial incentives which break the link with educational qualifications and avoid the automatic upward drift in salaries. In the short run, there will be the major problem of introducing the new salary structure, and in the long run, of keeping it flexible. In theory, differentials can be changed by lowering some scales and raising others; usually only the second is practical politics. If many differentials are changed by raising the lower sections, the financial resources required soon outrun what is desirable or possible in terms of real resources. The result will therefore have to be a round of inflation which reduces real wages to levels which match available resources,

or else a mounting deficit in the balance of payments. In the absence of inflows of foreign exchange on a massive scale, it is difficult to escape the conclusion that some degree of inflation will be the inevitable accompaniment of a major reform of salary incentives.¹ But to the extent that direct links between education levels and salaries are broken and cost-of-living clauses avoided, so the amount of this inflation will be reduced.

Summary and conclusions

The reform of incentives must be judged against the wider issues of unemployment, rising wage levels, expanding school enrolments and the accelerating costs of education. At present, because salary differentials are often linked to formal levels of education, an automatic relationship is created which raises the cost of labour rather than lowers it with every improvement in education. The rising cost of labour increases the cost of education and training, inhibits the growth of employment, and often leads in the end to a reluctance to expand education or training further, in spite of obvious needs for both these measures.

As incentives to encourage individuals to undertake further education or training, the present salary differentials between different levels of education are usually far more than sufficient. In contrast, the differentials between different types of work and training and between rural and urban salaries are often far less than is needed for development.

Reform should correct these differentials but in ways to break any links which would continue the automatic upward drift in salaries. Several approaches are considered, but in practice all are likely to involve some inflation. This also must be faced, by avoiding cost-of-living clauses in wage settlements, and by accepting the inevitability of some inflation if progress is to be made.

¹ This argument is yet another supporting the 'structuralist' case that some inflation is inevitable if development is to be rapid. For a general statement of the structuralist position see Dudley Seers, 'Normal growth and distortions: some techniques of structural analysis', *Oxford economic papers*, March 1964

Colloquy

The two foregoing papers were primarily addressed to the factors affecting the implementation of educational and manpower plans. Like all other themes, this particular one had threaded its way through the earlier phases of the symposium. Now, however, the Chairman brought the discussion into sharper focus.

CHAIRMAN It is now methodologically possible in virtually any country to frame an educational plan which will broadly state the main directions the educational system is to take, and the qualities it is to have, even when facts are relatively scarce. But when later on one asks how the plan is 'going', the answer differs markedly from one country to the next. It is never going 'perfectly', but in some places it is going reasonably well, whereas in others there is no apparent connexion between the plan and what is actually happening, or not happening. It is evident, therefore, that the *planning process* includes much more than simply designing a 'plan'; it includes also the very important business of carrying it out, of implementing it, of evaluating how things are going, and of modifying the original plan as circumstances require. In short, educational planning must be seen in larger perspective as a dynamic and continuous process. We are thus led to ask: what are the pre-conditions for establishing an effective planning process, which not only puts goals on paper but translates them into reality? Without these pre-conditions, a country can go through the motions – the forms and symbols of planning – yet still not have the kind of planning that has any real meaning. I submit that some countries, as of now, are simply not ready for real planning, for they lack some of these pre-conditions, these prerequisites. Guided by the light of Thomas's excellent paper on the 'carry-through' phase of planning operations, can we identify these prerequisites? What sorts of administrative arrangements, attitudes and behaviour are needed, for example? Beyond this, I hope we will come to grips with the thorny problems of incentives and wages policy, raised by Jolly's provocative paper,

which clearly have great bearing on the success or failure of a plan's implementation

JOLLY Wage policy is, I think, coming to be recognized as a vital component in any comprehensive development plan. Recent experience in many developing countries seems to suggest that the organization of wage negotiation and the differences in bargaining power of the various groups within the country are such that wage policy is often determined independently of general economic policy. Often it is determined from the standpoint of the interests of small and particular groups, rather than the interests of the country as a whole. Harbison points out that this is an enormously tricky problem to deal with politically. Yet, as far as I can see, there is no escape from dealing with it. In Africa, at least, the rising problem of unemployment, both among school leavers and others, may soon become politically important enough to challenge those who, at present, wish to resist any form of national wages or incomes policy.

A major element in economic and manpower strategy should be to concentrate on changing this balance of forces to the extent that it is possible. This can be done at one level, simply by exposing the connexion between wages and employment; that is, by showing that higher wages may lead to lower employment. At another level – as Arthur Lewis has said – an expansion of education in excess of absorptive capacity may possibly produce a new manpower supply-demand situation permitting a fundamental change of existing employment and wage policies. One of the arguments for continuing to expand education beyond present absorptive capacity is that, when this fundamental change in the wages and salary structure takes place, a country will then have the manpower ready to be used more fully than its present wage and salary structure allows.

If one is prepared for a change in wages and income policy, manpower planners can make particular contributions. The wage structure in most developing countries largely follows and is governed by the wages and salary structure of central government. Because of this, it often happens that the wage structure is based on educational levels. In Africa, a person with a primary education can expect very little, but with two years of post-primary education or a complete secondary education, his wages may be increased by as much as five times. If a country's wage structure is defined in terms of these educational levels, rather than in terms of the work done or required, there is a built-in escalation which operates as soon as education is expanded. You cannot blame the educationist, or, indeed, any individual working within a given framework of wages and salaries, for acting as he does. It is not for the individual, or for the single

ministry, or for the individual employer to lower his salary scales. If he does, he immediately gets second or third-best recruits. It is only if the problem is tackled at a national level that there is some chance of achieving a realistic relationship between the wage scale, the level of available resources, the output of manpower at various levels in the country, and the upgrading of the labour force in all areas.

This leads to another point. Once the manpower planner has analysed the connexion between his manpower programme and the general economic programme or plan of the country, he can offer certain guidelines for the incomes and wages policy being devised. Let me describe a very simple calculation to illustrate this point. Three elements are involved. Begin with the present wages and salary structure with its very large differentials and with the present number of people employed at various levels of education. Then take a long-run projection both of manpower requirements and of the possibilities of economic growth. Finally, take either 'from the air' or from the experience of other countries some maximum differential in the earnings of persons of different levels of skill and education which would be acceptable in, say, 1980. These three elements in combination can serve to construct guidelines for the rate of growth of real earnings that would be possible for persons at different levels of education.

I have my doubts about how far this takes us because it doesn't deal with political problems or with many other issues involved in making these differentials effective. Nevertheless, the formula sets a certain range for what is possible in a consistent wage and manpower policy related to the development plan.

A further point I would like to make is this. A real reform in the wages and salaries structure is almost always going to involve some considerable degree of inflation, since it is virtually impossible to reduce money wage-scales. But, theoretically, with careful planning, one may achieve a change in the differentials by increasing some wages while holding others constant and reducing their real value as prices rise.

TIMÁR

In the carrying out of plans, the situation differs from country to country. What for us in Hungary is a difficulty, may not be in other countries. But I think that one of the greatest and most general difficulties is this. It is whether one can establish a good plan which provides the policy-maker with fairly concrete information, gives him a range of choices, and at the same time shows the consequences which will follow from any specific choice. A failure in any of these respects leads to trouble in carrying out a plan.

A plan, in my opinion, should provide a concrete basis for the elaboration of governmental economic, educational and man-

TIMÁR
cont.

power policies. The plan, to repeat, should serve as a basis for making concrete decisions. Sometimes, there are good plans but when it comes to policy, all is not always straightforward. Decisions are lacking. From this point of view, we must see to it that, if we want something planned, we must be prepared to make very concrete and sometimes very rigid decisions – even if this contradicts what we sometimes call freedom.

GRÉGOIRE

I have the impression that there are two major reasons why plans are not carried out.

The first one is that often they are not workable: targets are set which, from the very beginning, are doomed not to be reached because they do not correspond to the means available at the given moment. So much so, that I said once – rather unkindly – that in certain countries (including some advanced countries) the plan is in a way an alibi. When the plan is made, it is believed that all the problems are resolved because there is a document which can be read and publicized, but which one knows full well has no chance of being carried out in practice.

So now comes the very important question raised by Timár on the relation between the planners' work and the work of the policy-makers. Timár has told us, and I quite agree, that the plan must be the basis of a policy and, particularly, the basis of a development policy. But, on the other hand, all those who have worked on planning know that what specialists and planning technicians usually lack is sufficiently broad guide lines. It is not possible to attain what is desired because the policy-making authorities have insufficiently or badly defined the targets to be reached. But we have also been told that, in many cases, the objectives outlined by the policy-makers were so vague, so general, so optimistic, that they were not workable. So we are led to ask ourselves about the practical workings of a discussion between planners and policy-makers.

It is the policy-makers who, ultimately, have to take the decisions. But these decisions will not be practicable unless they have been verified by the planners, and the planners cannot work without policy guidance. Thus one is led to conceive a system of permanent shuttle service. In this connexion what we have been told about the situation in Tanzania is particularly interesting since, as a result of circumstances, it happens that there is a personal partnership between those responsible for policy and those responsible for planning. But in most countries this favourable situation does not exist. One may ask if planning, with its demand for a new type of collaboration between policy-makers and technicians, will not lead to a real institutional reform.

A situation in which the technicians who carry out the plans are mere subordinates of those who make them is obviously out of

date; what is needed is partnership with the technicians at the moment when the basic decisions are made. This is why I have often said that all those who – in any country, no matter what its régime – denounce the technocratic danger are, in reality, conservatives; for the problem of technocracy is not the same problem that it was in the nineteenth century. Today, it is essential that the technocrats should be associated with the policy-makers at the preparatory stage and when the basic decisions are taken.

The second reason why many plans do not materialize is that there is no real desire to carry them out. I will not comment about this at the policy-making level, but will speak of the matter at the level of those who execute them. What has struck me very forcibly in a certain number of countries that I have visited is the reserve shown at the operational stage by those entrusted with the execution of even a realistic plan. And one of the main reasons seems to me to be often purely psychological. To the extent that the plan is made by a group of men quite distinct and separate from those who are responsible for decisions in everyday life, the latter tend to feel that the plan is not their business, and, as a result, they are not directly concerned with what happens to it.

I have been in countries where an educational plan laid down by economists or even pedagogues, interested personally in the development of education, was considered by the teachers as a purely intellectual tool, in which they were not specially concerned. In a Latin American country which I visited with Debeauvais, last year, this was exactly the situation. There was an educational-planning group which was doing good work. But the ministry concerned and the teachers and people at the universities knew nothing at all of this work, and did not want to know. This poses the very practical problem of how to organize a system under which those who will carry out the plan may be associated in creating it.

I do not want to extol what has been done in my own country, France, because I know too well its shortcomings. Yet I think that one of the advantages of the mechanical administration of planning in France (or of other countries which are attempting to work out a similar system) is that the central planning headquarters [Commissariat au Plan] is not a body set apart from all other ministries. It is a highly flexible instrument and the educational planning is done in the first place by those responsible for everyday education.

ERDER To return to the Chairman's specific question, I think that the first pre-condition for effective planning turns on the need for having a proper approach to planning itself. Most educational

ERDER
cont.

plans so far were meant to dramatize issues and to convey an idea about their order of magnitude. But they cannot be implemented, simply because a plan so conceived is not an action programme even if you have the machinery for action. A realistic plan should be formulated in ways that take into account the component decisions for its implementation, the constraints linked with these decisions, the instruments for action and the constraints linked with the available alternatives. This means that the plan should be formulated as a set of instructions for certain people to receive and execute.

This, in turn, has very serious implications for the institutional structure of the planning operation itself. Specifically, the planning group should have access to executive decision-makers in the administration; the executive decision-makers should be made responsible for planning activity and should participate in it; there should be a kind of division of labour between the planning done at the central point and programming done in the executive decision-making points; and there should be constant communication between the two.

Furthermore, in the institutionalization of planning, there must be a place where the work of evaluation can have its own important say. Based on access to research and development, it must be able to feed back its findings into the execution of the plan, and to correct the assumptions made during the earlier stages of planning. Suppose, for example, that you decide to expand your school system with new primary schools, or new secondary schools, or new technical schools. You cannot really know what the end product will be fifteen years later, but you will be better off in your planning operation if you begin by evaluating the performance of your existing school system. Otherwise, you can find yourself in the position of wasting precious resources by expanding a school system that is obsolete and inadequate when put to the test of need. In Turkey, for example, we discovered that the graduates of our agricultural technical schools were joining the police force or were becoming non-commissioned officers in the army. A decision to expand this part of the school system would, therefore, supply your security service needs but not your agricultural needs.

When you detect such problem areas you must face the question of how the school system should be changed to deal with them. What kind of new institutions do you create? What innovations do you make? The process of arriving at an answer is very difficult. It needs for its support very important research work, a capacity for experimentation and, to come full circle, the kind of formulations for action that can be evaluated. This means that all assumptions should be made clear; the measures of perfor-

mance should be made clear; and one should be able to see clearly whether the newly created institution is efficient and corresponds to the original expectations about it.

I think that another essential pre-condition for effective planning calls for access to experience elsewhere. That is where international co-operation is important. Certain typical or universally valid situations which arise in one country can be made known to those who are trying to do the same thing or similar things in another country. If so, this again puts the problem of research and development in education on a plane equal in importance with the execution of the educational plan.

Finally, the factor of 'utilization' is an essential pre-condition for effective planning. By this I mean such things as the use of available manpower, the problem of recruitment policies, the number and kind of school graduates you get and how they are linked with a job. It means the many things standing between manpower planning and programming, educational planning and programming, the existing educational institutions and the actual employment outlets in the community. It also means coming to grips with the problem of the international mass market for skills. Can we think of ways to regulate the international movement of scientific and technical personnel so as to limit the losses of such personnel among the developing countries who need them the most?

CHAIRMAN

Erder has given us some very stimulating ideas. They suggest that we should keep in mind the important distinction between two stages in the development of a planning process. The first is the stage of simply trying to get started. The second is the stage which comes after some years of experience, of improving what you are doing. In the world today, you can see this difference, for example, in the case of certain African countries which are still trying to get a planning process established for the first time, in contrast with such countries as the Soviet Union, India and France that have been in the planning business for many years, but are still working hard to improve the process.

(One suspects that the former group of countries can profit by studying the experiences of the latter group. With this in view, the International Institute for Educational Planning has concentrated much of its research effort on extracting useful lessons of experience from some countries to make them available to others.)

If you think of planning as a useful tool for the management of a society's affairs, then when you are just getting started in your planning operations, you immediately face a very difficult obstacle. It is that you have an inherited set of essentially obsolete institutions - along with their administrative arrangements

CHAIRMAN
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and attitudes – that are ill-adapted to the planning job you are trying to do. This shows up, for example, in rural development, where as many as six or ten different national agencies have special roles to play, yet are unaccustomed to playing them in concert. In the past, they functioned more as a ‘caretaker’ government than as a positive development government of the type now called for.

If we keep in mind the distinction I have tried to draw between the two stages of planning, are there any lessons the novices in planning can profitably learn from those who have had considerable experience in the field? Specifically, is there anything they can profitably learn about how to get started – about how to modify old administrative arrangements to accommodate the new planning situation?

JOLLY

Once you go beyond what was previously understood to be the main task of manpower-educational planning – namely, to forecast the long-run needs and to see how the educational system can be directed toward meeting them – once the task of manpower-educational planning takes in a whole range of more immediate short-run policies, the problem of co-ordinating the components in an educational plan becomes much more difficult.

When planners are dealing with long-run problems and are projecting needs for ten or fifteen years ahead, the question of co-ordinating policies comes down to something like this. There is the need to co-ordinate the plans of the economy, as represented by what is being done administratively in the planning office, with the plans for education as represented by what is being done in the ministry of education. There is also the need to tie these things together – in so far as it is possible – with wage policies. This, in essence, is the extent of the co-ordination.

But, when you have to take short-run policies into account, you are no longer dealing with just two sections of government, nor do you have a fairly simple conceptual framework for the planning operation. You must grapple instead with a wide range of bits and pieces of the government machine and of the private sector. You must grapple with elements that have been accustomed to deciding their own policies in ways completely unrelated to other aspects of economic and social policies – aspects which should be of direct concern to them but which they have traditionally ignored.

Two steps are clearly indicated if there is to be a more effective measure of co-ordination of short-run policies. The first is to build new administrative links in the planning process – which means a complete change in the attitudes of the people responsible for policy-making. The second is to create the means for a supply of information on a regular, continuing basis – and hence the

means for informed decision-making where one decision is related to another.

All this is particularly relevant in Zambia at the present moment. The reason, as I have pointed out in an earlier connexion, is that our short-run problem is a shortage of trained manpower rather than a shortage of financial resources or foreign exchange. It was not difficult to set up a planning body to co-ordinate the basic decisions of the plan and the short-run decisions of implementation as they involved educational policies, the use of the existing scarce supply of manpower and of manpower recruitment policies. Yet, having set up this machinery, we have had our problems in making it work.

This is how we tried to make it work. In our initial approach, we decided to formulate the manpower budget for the public sector along lines similar to those traditionally used in formulating the financial budget of the government. The need to do this seemed obvious. All procedures of government ministries came to a co-ordinative focus in the allocation of funds at the time the budget was being prepared. When finance set the limitations on what could be done, the traditional budgetary approach worked very sensibly. When, for example, a ministry wanted to extend its operations, it submitted a proposal for new posts. The ministry of finance judged the proposal in the light of whether or not it had the funds to pay the salaries of the new posts. The establishment section of government judged the proposal in the light of whether the posts were justified from the standpoint of efficiency. Could the ministry get by with two typists instead of three, or with only two technical officers instead of five? Provided there were enough funds, that the job was intrinsically worth doing, and that it was not extravagant in the use of manpower, it was approved.

There was, in all this, no co-ordination of the 'revenue of manpower' with the plans for the 'expenditure' of manpower. This became clear when the boom in the price of copper led to a boom in government revenues. All at once, it was possible to expand the number of worth-while projects. But the posts that needed filling escalated far beyond the available supply of skilled manpower, and the number of vacancies greatly increased. When finance is not the crucial limitation, the budget that *should* be balanced – namely, the manpower budget – can go to pieces. Accordingly, a manpower planning board was created. On the advice of people to whom we had access, instead of making the board big and representative, we made it small and very powerful. Its chairman was the vice-president; the other members were the minister of education, the minister of labour, the minister of state for the civil service, and three or four perma-

JOLLY
cont.

ment secretaries of the key ministries. The board, so composed, had the right to create subcommittees representing the private sector, or working committees representing various government ministries, all of whom could give the parent board advice on various points. At budget time each year – so it was hoped – the board would frame a manpower budget for the country. It would be based on information collected about the supplies of manpower, the short-run output of training institutions, the prospective output of informal educational institutions, the estimated number of Zambians who would be returning from abroad, and the needs for manpower in particular projects. One more detail. Since we have a private economic sector dominated by mining, it was felt that an attempt should also be made to take into account the manpower needs of the private sector in at least the major industries.

Implementing this structural conception of manpower budgeting has proved far more difficult than expected. The difficulty did not lie in selling the need for a co-ordinated manpower policy. In Zambia, as I have stressed before, the need is recognized without argument. One of the difficulties was the deep-rooted procedures of the civil service, long accustomed to budgeting only in terms of financial factors. Another and closely related difficulty was the complete lack of the kind of information that was needed to co-ordinate manpower planning and budgeting. The various ministries are well acquainted with keeping detailed financial records, and various committees exist to ensure that this is done correctly. But it is much harder to do this on the manpower side, though I think one can go a long way to overcome the difficulty and to build up the body of information needed.

In this area, Zambia has made a specific advance which may be worth reporting here. The government has a computer which handles its salaries and has been working on a system of manpower records in which the details needed for salary payment are completely co-ordinated with the details of manpower information. This is possible because three-fourths of the information needed to calculate salaries – the post, the seniority, the age of the person, whether he is an expatriate or local – is useful for manpower calculations as well. For manpower purposes, the computer also records details such as educational qualifications. The result is that now when the computer prepares the salary cheques of the civil service, it also prepares a full record of the governmental manpower situation, including the vacancies in various posts and the educational qualifications necessary to fill them.

Yet to many people statistics are only what you produce in order to answer questions asked by international agencies or by

parliament. It is difficult to get across the idea that statistics have a more cogent value – that they provide the only way to grasp what is really going on in an organization of 10,000 to 11,000 people of high-level manpower, and of 50,000 to 60,000 people employed in lower manpower levels.

Finally, there are disadvantages in making a committee small and powerful instead of large and representative. Our experience has worked out differently than foreseen. It is true that because of the high official status of the members of the committee, we can get decisions made that carry real authority. But precisely for the same reason there is always the problem of finding the moment when these busy top officials can spare the time from other important matters to meet and deal with manpower problems. In practice, therefore, there are only irregular meetings of the manpower committee. Moreover, its discussions have a high degree of formality that follows inevitably from a civil service regulation to the effect that a discussion at the ministerial level has to have the papers prepared in a particular fashion. This formality also makes it difficult to get the broad-ranging discussion and quick flexible decision that is needed.

RAO Before the point gets away from us, I want to advert to Erder's reference to 'brain drain'. I have a concrete suggestion to make concerning it. It is that the developed countries should impose a tax on the import of technical personnel from the developing countries. I think the developed countries should have a free market for the goods of the developing countries and a heavy tax on the import of their technical personnel. I would be quite satisfied if it was paid by the employer. Suppose, for example, I am an engineering student from a developing country and I am completing my education in the United States. An employer comes to me and says: 'If you return home upon your graduation, you will get perhaps \$1,200 a year. But if you go to work for me, you will get \$9,000 a year.' If the student accepts the job offer, before he can be hired the employer would have to pay a tax of \$4,000 – or an outlay of \$13,000 the first year. You would not be hurting the student from the developing country since he would still be getting his \$9,000. But the tax would act as a disincentive on the part of the employer to hire somebody from abroad.

MWINGIRA

If the idea is to help the developing countries, why can't the developing countries, themselves, take the initiative to provide the incentives for these people to remain inside the country? Why follow a negative approach to this question of technical personnel?

RAO The answer to that is obvious. Where do I have the means to give the engineering student \$9,000 a year in order to make him want to stay in India? . . . But to continue with another

RAO *cont.* matter we did not discuss at all in this seminar and which I would like to bring up, there is the question of loan scholarships as a method for helping students get a higher education.

In India, we can make the terms liberal. They can be like IDA (International Development Association) loans, with no payment for the first four or five years of employment and with no interest charges. All these things can be done. But I think it is absolutely imperative that people who go in for higher education which costs the community a great deal of money should be prepared to pay back the loans. General public opinion, however, is against the idea of loans. It understands scholarships, but it doesn't understand loan scholarships as something you pay back. I have recently been collecting material on this subject. I have found that in Japan they have a very good system of loan scholarships. I have found that in New York there is a regular system for going through a bank, and the banking system itself makes the loans to students for purposes of higher education.

CHAIRMAN There is also in the United States a federal government system for student loans. One of its provisions is that a student who enters teaching gets something like 50 per cent of his loan *forgiven* over a period of years. The arrangement is designed to affect job choices.

RAO Depending on the top job priorities, you could *excuse* anywhere between 50 to 70 per cent of the loan. It would give you an immense advantage in that you could shift your emphasis without breaking up the wage structure. Right now, for example, we pay a premium on engineers. Five years from now, they will be coming out of our ears, and to knock their salaries down is going to be impossible. We have to jack-up somebody else, and the whole thing keeps escalating. This way, it is all done neatly by the remission of loans . . .

If you are going to have educational development at all – and here I more or less agree with what I think Hunter has been saying – institutional change is necessary for its success, and it will be induced by educational expansion. If you have educational expansion, there will be a demand for institutional expansion.

The same thing is true with respect to the environment. The moment you have education in the rural areas, you begin to make people science-minded and give them confidence to change their environment – say, by using fertilizers. If you get this confidence, then the administration must be in a position to give them the supplies – because education does not produce the supplies. In other words, any community that goes in for educational expansion has a tremendous responsibility both for institutional change and for change in the environment. If it does these things, it

gets the best dividends from it. If it does not, the dividends may in some cases even be negative

DEBEAUVAIS

With respect to the question of whether or not there should be a limit to the expansion of the educational system, I believe our discussion has been to the effect that there should be no limit to the expansion of primary education – but that the question arises in connexion with post-primary specialized education. A striking feature of our discussions has been the recurring theme that in only a few countries could unemployment serve as a pointer for educational policy – since unemployment is still little studied in the developing countries. The educational level of the unemployed is not known even where studies on unemployment exist. Obviously there is need for new research on this question.

Our discussion has stressed the importance of actions which can transform the educational system from within, i.e., by the interplay between educational programmes and the system of values, attitudes and behaviour. The task is very difficult. But, in approaching it, we can find comfort in the idea that recently independent countries, in attempting to reform the educational system, have entrusted to it a new mission – the development of a national conscience – and that on this point the educational system has been realigned with some measure of success. It will, perhaps, be more difficult to realign it toward economic development and related attitudes. But at least we have a hopeful precedent regarding the possibilities for action within the educational system.

Regarding the choice of occupations, how can we be sure that the students trained will work in the traditional sector? It is an extremely difficult problem. I believe that this should form part of the evaluation of a project, because an educational undertaking in the traditional sector can be interesting without leading to the desired employment results.

Finally, I would like to point out that the obstacles to development always present themselves in succession, one behind the other. The process began when the shortage of resources for investment was seen as an obstacle to development. Then came the obstacle put in terms of the lack of education. Next it was said that it was not education in general which constituted the bottle-neck but education to meet particular labour requirements. Educational development, therefore, must be adapted to meet those requirements. Today, in a reversal of the foregoing, it is being said by some that the bottle-neck lies in the over-production of the educational system. But I believe that these successive changes of attitude should cause us to wonder whether, if we have

a similar seminar in a few years' time, we will find yet another obstacle overtaking us from the rear.

HUNTER

Debeauvais has rightly said that we agreed that the absorptive capacity of the economy should not be the measure of primary education. Indeed, in India and elsewhere, education has moved far beyond the capacity of the economy's absorptive capacity. But I think we must ponder very deeply what this means.

In Tanzania, in many other African countries, and in some Asian countries, only 3 per cent of an age group of children get beyond primary education. Are we saying, then, that manpower planning is concerned only with those 3 per cent of people for whom there is perhaps absorptive capacity? Are we saying as manpower people that it is for the economist to deal with the 97 per cent of people for whom absorptive capacity is not applicable? Are we to leave to one'side all considerations of a productive life for so high a proportion of the population of developing countries?

There has been a great emphasis by Rao and others on the need for the educational system to change attitudes. I should like to say that I believe this is a great illusion unless the environment is changed first. There have been frequent efforts in the past to change attitudes among primary school-boys and among others. The history of colonial administration in Africa is littered with examples of enthusiastic district commissioners, ministers of education and others who said: 'Let the primary syllabus be adapted to the rural surroundings.' These are not new phrases. They have almost universally failed because the primary school-boy, quite rightly, has observed that the life which he is being asked to live is less good than it could be and even less amusing than being a *chômeur*, being unemployed in the town. I therefore think we could make the greatest mistake in setting off on a campaign of altering attitudes unless the economic planners first come with us in a concerted effort to alter the whole rural environment. If they refuse to come with us, I think it might well be better to leave the attitudes where they are, because we shall create expectations which will not be fulfilled for the second time, and we shall not be forgiven.

KOLLONTAI

I would like to put forward the point that planning has several stages. In the first stage, the usual procedure in most countries is to establish a specific focus and then work out all the other indicators of the plan in relationship to it. It was suggested by one of our colleagues here that countries should develop their plans with the main object of increasing employment. I think that experience with this type of projection for economic development shows a very serious danger inherent in it - namely, that all the decisions are taken in relation to the hope of increasing employment in a short-term period. In the short-term period

you do, in fact, get a less bad solution than you would otherwise get. But I would strongly argue against a plan that did not have as its main purpose the increasing of *production* in the long term, because productive capacities are necessary to increase the employment possibilities. We must go on the premise that the only way to increase jobs and better the employment situation is to increase over-all production.

To all this, I would add something else. It is that the problem of incentives which Jolly posed in his paper deserves very serious attention because of its importance to the implementation of manpower programmes. The plan can work out a very good scheme for the best use of manpower, but the incentive structure can work the other way around, or at least lead to results quite different from what has been expected.

DÍEZ-
HOCHLEITNER

Though I appear here for the first time at what is your concluding session, I have tried from the outset to keep informed of the trend of your discussions. In the course of my Unesco work, when I talk with educators, I often urge them to consider their own efforts in a larger context – to take into account the importance of manpower surveys and the employment opportunities of a country; to be aware of the projections and limitations of economic development and, more particularly, the financial possibilities of a country at a given stage of development. Very often the reply is: 'We know about the sort of studies you want us to take into account. We know the factors to be considered in an educational-planning exercise or in the identification of priority projects for development in a country. These sound very nice in theory and on paper. But how do we tackle these problems when in most cases there are not sufficient data, and even their basic conceptual aspects are not clear at all?'

I could make a long list of difficult questions which our various missions are faced with. But at this stage of the meeting I would mainly like to emphasize my view that education is not guilty of the employment difficulties which you have discussed. It is, however, guilty of inadequacies in the content, the quality, and the diversification of education. Thus when we speak about the needs and the potential contributions of education, we should always be clear that we are talking about *good* education, whatever it may mean in a given country, at a given stage of development.

This being said, I think I can say to a group of colleagues that I was a little worried by two reported views put forward at this symposium. I refer, first, to the view that the amounts awarded to education have reached or are close to the maximum limit,

DÍEZ
HOCHLEITNER
cont.

and second, that education may not be as decisive a factor for development as it was thought to be. The idea of a financial ceiling may be true for a handful of countries under special circumstances. But we should be wary of extending the view generally. With regard to the second, I hope none of us wants to repeat the historical experience of the European industrial revolution. Perhaps without a conscious intention to act as it did, that revolution made its way at the expense of the poor. This we do not want to happen again, although we do want to see economic development.

We cannot separate the technical aspects of educational policy from its political aspects in terms of human rights. All our technical efforts must be within a strategy to achieve those higher aims. In a given country at a given stage of development, this may require a somewhat slower movement toward universal primary education in order to give more attention to projects of immediately higher priority. We must distinguish, as was suggested, between the short term and the long term, and set the right pace toward various long-run goals. Maybe we are at times too impressed with the short-term constraints and the limitations they imply. We should avoid over-emphasizing these, and the purely technical aspects of educational strategies. When we are faced with social pressures of the kind mentioned by our colleagues from Tanzania – where parents are urgently demanding schools – we cannot give them a technical answer except within a precise strategy designed to obtain a definite long-term end.

From the Unesco point of view, if I may strike another note, it is essential to promote research needed to resolve these planning problems you have discussed. We want to know, for example, how to adapt educational planning to each group of countries according to their stage of development, instead of throwing them all in the same basket as we may too often be prone to do. This is one of our main concerns now. We want also to know the level of educational qualifications needed for various occupations in any given country at a specific time. Too often we make the serious mistake of forgetting that the same occupation does not require the same educational prerequisites the world over.

To conclude on an encouraging note, I believe that we are moving toward the day when we shall be in a position to be spared the need to worry about planning primary and secondary education, except for some pedagogical aspects. We shall instead be talking about basic general education as a prerequisite for specialized education, and about how to link better the educational pyramid with the employment pyramid and the labour market. And we will even then need to avoid the false assumption that the level

of educational qualification at which students leave for employment will remain the same year after year, for education and the manpower aspects of educational planning will surely continue in a state of dynamic change.

I hope that your final report will reflect the scientific professional views of educational and manpower experts, and at the same time accord with the great conviction and hopes of all Unesco Member States that education is the key factor of development.



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